Kentucky Division of Water

Annual Report

Fiscal Year 2009

Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection
Division of Water

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From the Director

Dear Reader,

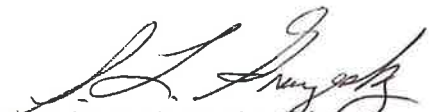
It is an honor and a privilege to present the Division of Water (DOW) Annual Report for State Fiscal year (SFY) 2009. This report is a reflection of where the Division has been over the course of the past year, and provides insights as to where we are heading in the future.

SFY 2009 is the first full year during which DOW's new organizational structure has been in place. This reorganization, in addition to various other unforeseen circumstances, has resulted in many of us in DOW facing numerous unanticipated challenges. As I read through this report, I am encouraged by the fact that as we worked through these challenges, we have dealt with them successfully. It is a testament to the commitment we have as a division to accomplishing our mission.

That is not to infer that we don't have significant work ahead of us! This report also demonstrates that we have better defined the scope of the challenges that remain before us. This report illustrates how the Division has invested its energy and efforts over the course of the previous fiscal year, and how it will continue to do so towards achieving our goal of improving the quality and availability of water resources throughout the state of Kentucky in the years ahead.

Thank you for taking the time to read this report and getting a better understanding of the various issues and challenges that affect water resources throughout Kentucky. If you would like to comment on this or future reports, please contact us at water@ky.gov and let us know what you think. If you have any questions, you may contact Peter Goodmann at peter.goodmann@ky.gov or Jo Blanset at jo.blanset@ky.gov for more information.

Sincerely,



Sandra L. Gruzesky, Director
Division of Water

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Introduction

The 2009 "Survey of Kentuckians' Knowledge, Attitudes and Behaviors" conducted by KECC and UK identified water pollution as the leading environmental problem among those surveyed. Clearly the work we do at DOW is of significant interest to, and has far-reaching personal affect, on the citizens we serve. DOW's operational plan is our guide for being responsive and responsible to the citizens of the commonwealth.

This report summarizes DOW's efforts toward implementing its fist operational plan. The priorities identified in this plan consist of:

1. Develop sustainable permitting programs that provide sound decisions in a timely manner.
2. Protect and improve the quality and management of water resources.
3. Ensure the integrity of water infrastructure through proper planning and promotion of sustainable infrastructure concepts.
4. Focus compliance efforts to meet federal and state obligations and promote priorities 1-3 of this plan.

DOW's reorganization of 2008 was designed to provide better decision making across programs and to better focus our efforts toward implementing this operational plan. As you read through this report, you will find a variety of initiatives that directly address these priorities.

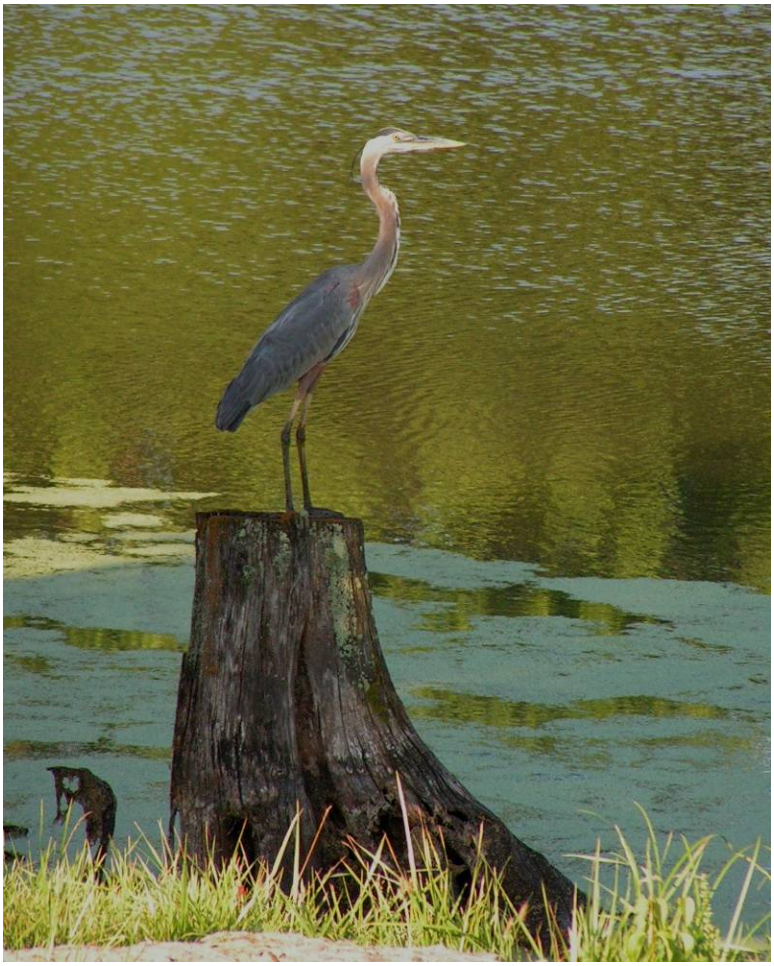
Some of the items that I would like to draw your attention to include:

1. Regulatory and fee modernization
2. Electronic tools for permitting and outreach
3. American Recovery and Reinvestment Act (ARRA)
4. LEAN Management Principles

Just to name a few…The operational plan provides the context for identifying initiatives in which DOW has, and will, invest its energy.

But we also need to be responsive to current conditions as we implement this plan and its associated initiatives Some of the conditions we experienced during SFY 2009 that demanded our attention included the 2008 drought, the 2009 ice storm, as well as staffing and budget constraints. Here too, you will find other examples within this report of conditions that warranted our immediate attention.

Regardless of whether our efforts were invested toward operational plan implementation or the circumstances in play at any particular point in time, we continued to function as a division focused on our mission. That mission being "*to manage, protect and enhance the quality and quantity of the commonwealth's water resources for present and future generations through voluntary, regulatory and educational programs*." Our commitment to this mission shall remain.



DIVISION OF WATER MISSION STATEMENT

To manage, protect, and enhance the quality and quantity of the commonwealth's water resources for present and future generations through voluntary, regulatory and educational programs.

The DOW Operational Plan is intended to serve as a road map toward accomplishing its mission, taking into consideration current environmental, regulatory and resource conditions. The division has identified four major objectives in this endeavor:

1. Develop sustainable permitting programs that provide sound decisions in a timely manner.
    a. Implement organizational structure that provides cross-program training and flexibility in assignment of staff to meet needs as they arise.
    b. Evaluate processes to improve efficiency.
    c. Identify activities that are not providing sufficient added value and target for elimination, or shift to other responsible parties.
    d. Update fee regulations to provide resources to meet federal and state obligations and improve permitting programs.
2. Protect and improve water quality.
    a. Fully implement wet weather compliance programs.
    b. Reduce pollutants in surface waters.
    c. Develop and implement watershed plans or Total Maximum Daily Loads (TMDLs) as appropriate.
    d. Develop an outreach strategy for elected officials and the public regarding water quality.
    e. Implement new organizational structure to improve efficiencies in assessment and analysis of water quality conditions and trends.
3. Ensure the integrity of water infrastructure through proper planning and promotion of sustainable infrastructure concepts.
    a. Promote EPA's Sustainable Infrastructure Initiative.
    b. Improve efficiency and decision making regarding water infrastructure.
4. Focus compliance efforts to meet federal and state obligations and promote objectives 1-3 of the division's operational plan.
    a. Meet federal and state obligations.
    b. Promote objectives 1-3 of the DOW's Operational Plan.
    c. Improve efficiencies in compliance determinations.

Each objective has several broad focus efforts that are key components toward accomplishing the objective, called tactics. Each tactic is further defined by specific actions intended to promote the accomplishment of the tactic. These actions are the activities the division intends to exert focused efforts toward completing during State Fiscal Year (SFY) 2009.

Resource Planning and Program Support Branch

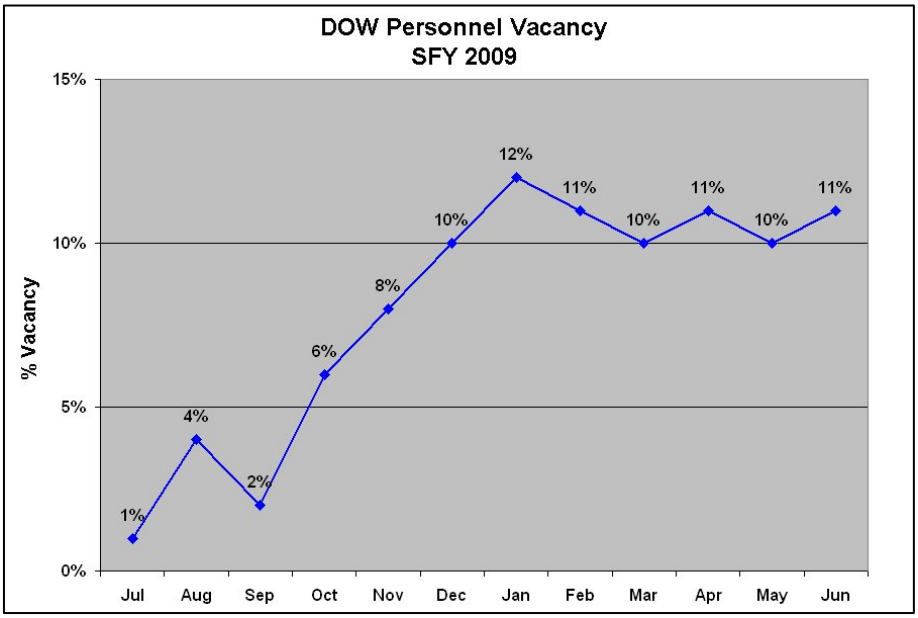
The Resource Planning and Program Support (RPPS) Branch is responsible for planning, coordinating, and facilitating the administrative, financial, and infrastructure functions of the division, including the development and management of the budget. Additional duties performed by RPPS Branch staff include the facilitation, development and promulgation of the division regulations and legislation. The RPPS Branch comprises four sections:

1. The **Program Support Section** facilitates division training needs, receives and pays invoices, tracks inventory, and orders equipment and supplies for the division.

2. The **Grants Management Section** manages the federal grant programs for the division. These grants are used to support personnel costs, equipment, training, and travel. Federal funds are also used to support projects that are developed in coordination with the division and implemented by a variety of nonprofit groups, state universities, local governments, other state agencies, and private sector companies. These projects have a water quality or water infrastructure focus.

3. The **Information Technology (IT) Section** performs IT functions and manages IT needs and infrastructure for the division. This section also manages the Tools for Environmental Management and Protection Organizations (TEMPO) database for the division. The IT section function is critical in working with program staff to implement the electronic tools and solutions that the division develops.

4. The **Data Entry and Management Section** performs data entry, manages the file room, and processes Open Records Requests. This section will be working on back-scanning paper files and developing a plan to be implemented in SFY 2010. The plan will eventually eliminate most paper documents in the division by managing digital copies of

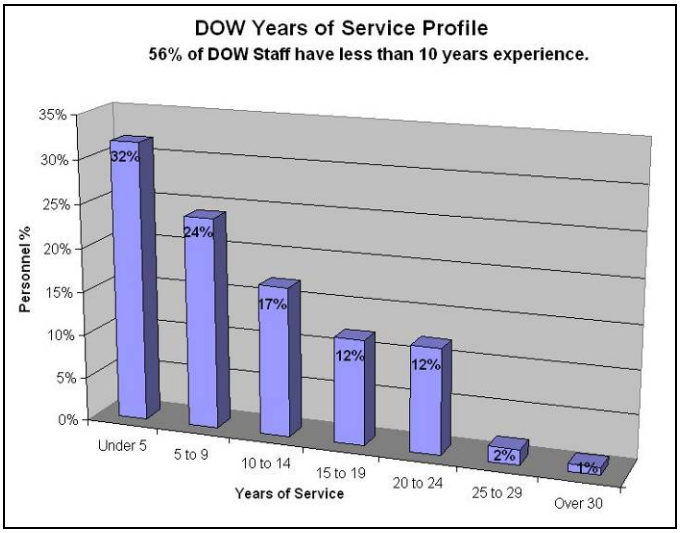


documents in TEMPO and other databases. The consolidation of administrative staff has allowed for greater cross-training and administrative efficiencies.

Division of Water Personnel Status

DOW Personnel

DOW averaged 237 filled positions per month during the first half of SFY 2009. As a result of retirements that culminated in December 2008, the division staffing level for the second half of SFY 2009 averaged 221 filled positions per month. This significant reduction in staff occurred in the Surface Water Permitting Branch (permit writers), the regional field office (inspectors), and the Water Quality Branch (monitoring staff). The division has experienced a growth in permit backlogs and the over-extension of other programs as a result of this significant attrition. Division management made significant efforts to re-staff during the last quarter of SFY 2009. It is anticipated that the division will have over 90% of the agency's positions filled by the first quarter of SFY 2010.



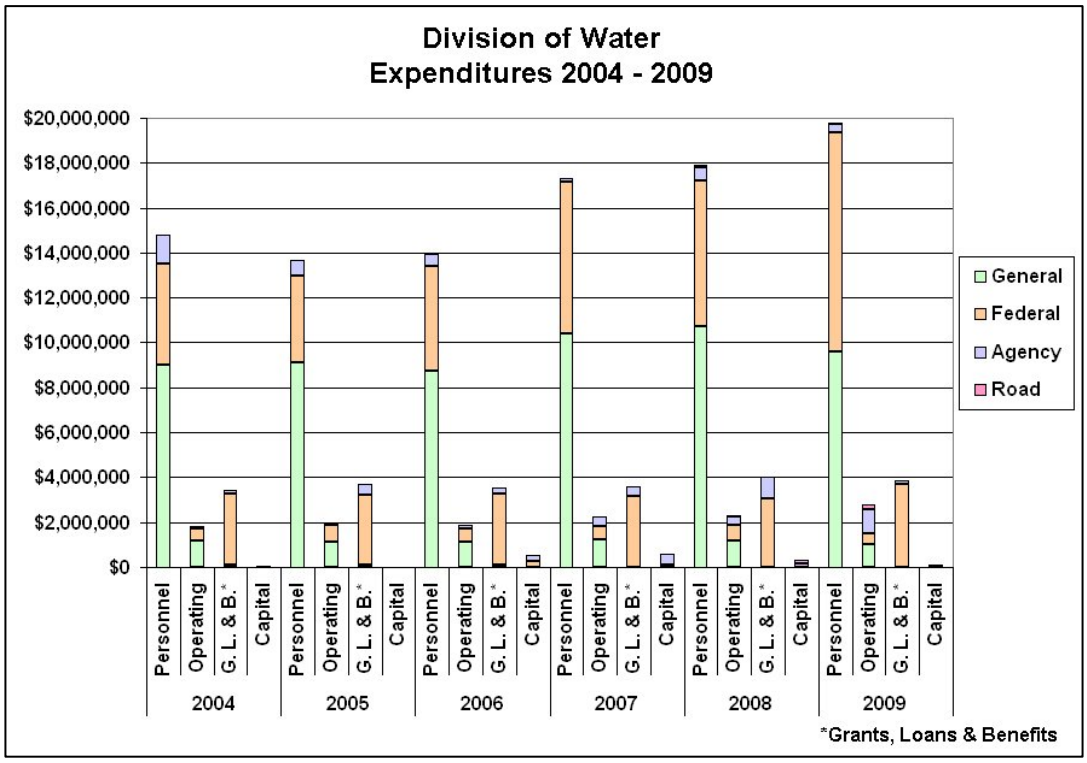
The division has the budget to maintain 248 full-time, permanent employees. The number of employees the division can maintain has decreased 16% since 1999; a loss of 49 positions. This reduction in staffing has resulted in an accumulated permit issuance backlog, a reduction in the number of inspections and the division's capacity to address complaints and emergencies, and has over-extended staff in meeting monitoring obligations, which is not sustainable.

Budget Issues

DOW activities are maintained by general fund appropriations, federal grants from the U.S. Environmental Protection Agency (EPA) and the Federal Emergency Management Agency (FEMA), and fees collected for permit and certification activities. An analysis of DOW funding for SFY 2009 shows a substantial change in the division's funding structure compared to SFY 2008. In 2009, federal funding comprised 46% of the agency's budget. In 2008, state general funds comprised 56 percent of the agency's budget and in 2009, this dropped to 44% because of general fund reductions. The division's revenue generated through permit and certification accounts for only 9% of the division budget for SFY 2009. A small road fund account made up the remaining 1% of the division's budget.

Budget reductions have been disproportionally realized on the Surface Water Permitting Branch (permit writers), the Regional Field offices (inspectors), and the Water Quality Branch (monitoring staff) because these programs are significantly more dependent on general funds than federal funding sources.

The division's permit revenues are insufficient to maintain the permitting and inspection programs.



The fees for the Kentucky Pollutant Discharge Elimination System (KPDES), facilities construction, and drinking water programs have not been updated since they were originally promulgated in the 1980's. In addition, the water withdrawal and floodplain permit programs do not currently charge a fee, nor does the whole effluent toxicity lab review program. The dam safety program is understaffed and cannot recover the cost of inspecting non-state-owned dams. It is anticipated that updated 401 Water Quality Certification fees, Kentucky Pollution Discharge Elimination System permit fees, and Drinking Water Laboratory Certification fees will increase permit revenue in SFY 2010.

American Recovery and Reinvestment Act of 2009

The American Recovery and Reinvestment Act (ARRA) of 2009, is an economic stimulus package enacted by the 111th United States Congress and signed into law by President Barack Obama on February 17, 2009. The Act of Congress is intended to provide a stimulus to the U.S. economy in the wake of the economic downturn.

The Commonwealth of Kentucky will receive $52 million for Clean Water State Revolving Loan Fund projects and $19 million for the Drinking Water State Revolving Loan Fund projects. Of these totals, DOW will retain 3% for project administration. These funds are distributed through the Kentucky Infrastructure Authority.

As part of the ARRA of 2009, the division received the Water Quality Management Grant awarded under Section 205(j) of the Clean Water Act, and commonly referred to as "604(b) funds."
The division is required to pass-thru 40 percent of these funds ($201,520) to regional public comprehensive planning organizations. The remaining 60 percent of these funds ($302,280) will be used by DOW to conduct annual water quality

planning activities in support of the agency's strategic planning process. This will require the tracking of programmatic and environmental indices, soliciting public inputs, facilitating planning sessions among division staff, and preparing division and branch level operational plans. The operational plans will be used direct agency resources to address a variety of water quality issues within targeted areas.

Lean Management Principles

The division has continued its efforts to implement Lean principals and tools to support the division's mission. Although originally developed for manufacturing systems, organizations in the private and public sector have adapted and applied Lean methods to office environments, service-delivery processes, and administrative processes.

The division has worked with the University of Kentucky's Center for Manufacturing to facilitate training for staff. In November, eighteen DEP staff and four personnel cabinet employees attended the Lean Executive Leadership Institute, a two-day session aimed at exposing the agency's leaders to principals of Lean. In January, February, and March of 2009, six staff attended a three-week training program at University of Kentucky and earned certification in Lean Systems. In June 2009, three staff attended the Lean Government Exchange in Des Moines, Iowa, where government agencies conducted training sessions and had the opportunity to share experiences of applying Lean principals to governmental processes.

Lean Systems are founded on three primary objectives: focus on process, eliminate waste, and align people to the organization's mission. There are several tools that can be used to implement the objectives, including developing standard work, value-stream mapping, and problem-solving. The six staff certified in Lean systems have begun in-house training on these tools and continue to develop curriculum to thoroughly implement Lean systems.

DOW will use the Lean approach to evaluate its programs and processes, to streamline the production process, cut redundancy, and improve its product. This effort will allow the division to focus limited resources in areas where they are most needed.

Newly Effective Regulations

Fiscal Year 2009 saw the successful promulgation of many administrative regulations. Regulation updates kept DOW current with federal requirements and changing technologies.

Surface Water, Chapter 5

- 401 KAR 5:010 "Operation of wastewater systems by certified operator" (effective March 2009)
- 401 KAR 5:052 "Requirements applicable to cooling water intake structures for facilities regulated by Section 316(b) of the Clean Water Act" (effective October 2008)
- 401 KAR 5:057 "KPDES Pretreatment requirements" (effective November 2008)

The amendment to 5:010 continues the requirement that a certified operator operate a sewage system. This amendment was needed because a new chapter (401 KAR Chapter 11) is being created to cover the details of operator examination and certification. The other regulations in this chapter, 5:052 and 5:057, were created and amended (respectively) to stay current with federal regulations.

Water Wells, Chapter 6

- 401 KAR 6:001 “Definitions for Chapter 6” (effective October 2008)
- 401 KAR 6:310 “Water supply well construction practices and standards” (effective October 2008)
- 401 KAR 6:320 “Certification of water well drillers” (effective October 2008)
- 401 KAR 6:350 “Monitoring well construction practices and standards” (effective October 2008)

DOW updated regulations relating to the construction of monitoring and water supply wells and to well driller certification. Chapter 6:001 is a new regulation containing the definitions used in the chapter. Chapters 6:310 and 6:350 update and clarify construction and performance standards for water supply wells and monitoring wells, respectively. Chapter 6:320 amends the certification requirements for well drillers. Specifically, it eliminates the rig operator provision of the previously effective regulation, clarifies penalties for non-compliance, and increases the continuing education requirement for annual certification renewal.

Public Water Supply, Chapter 8

- 401 KAR 8:010 “Definitions for 401 KAR Chapter 8” (effective April 3, 2009)
- 401 KAR 8:020 “Public and semipublic water supplies; general provisions” (effective April 3, 2009)
- 401 KAR 8:070 “Public notification” (effective April 3, 2009)
- 401 KAR 8:075 “Consumer confidence reports” (effective April 3, 2009)
- 401 KAR 8:150 “Disinfection, filtration, and recycling” (effective April 3, 2009)
- 401 KAR 8:200 “Microbiological monitoring” (effective April 3, 2009)
- 401 KAR 8:250 “Inorganic chemical sampling, analytical techniques and maximum contaminant levels” (effective April 3, 2009)
- 401 KAR 8:300 “Lead and copper” (effective April 3, 2009)
- 401 KAR 8:510 “Disinfectant residuals, disinfection by-products, and disinfection by-product precursors” (effective April 3, 2009)
- 401 KAR 8:550 “Radionuclides” (effective April 3, 2009)

DOW is amending many drinking water regulations to keep current with federal requirements. The division has determined that an appropriate strategy for keeping state regulations updated is to simply cite the federal regulations that contain specific requirements, rather than duplicate the narrative of those federal regulations in the state regulations. The regulations identified in the above list cite their federal counterparts.

- 401 KAR 8:040 “Laboratory certification” (effective July 2009)
- 401 KAR 8:050 “Drinking water program fees” (effective July 2009)

Chapter 8:040 provides procedures for the certification of laboratories performing analysis for public and semipublic water systems. The amendment to this administrative regulation allows certified laboratories to use the most recently approved analytical techniques. Chapter 8:050 establishes fees for reviewing plans and specifications of public water systems and for laboratory certification. The amendments to this administrative regulation increase fees for laboratory certification and water system operator certification to recover a higher percentage of the

actual costs of those programs. The amendment adds a surcharge for late payments and a penalty for payments not received within 10 weeks of the due date.

Water Quality Certification, Chapter 9

- 401 KAR 9:010 "Section 401 Individual Water Quality Certification public notice" (effective August 2008)
- 401 KAR 9:020 "Section 401 Water Quality Certification fees and certification timetable" (effective October 2008)

401 KAR Chapter 9, Water Quality Certification, is a new chapter containing two new DOW regulations. Projects that include the discharge of dredged or fill material into waters of the Commonwealth require a 404 permit from the U.S. Army Corp of Engineers. In order to receive this permit, applicants must first obtain Section 401 water quality certification from the Commonwealth to affirm that the discharge will not violate Kentucky's water quality standards. The federal regulation requires that state agencies establish procedures for public notice in the case of all applications for Section 401 water quality certification. All surrounding states charge fees for Section 401 water quality certification. 9:010 establishes procedures for public notice and 9:020 sets fees for the review of certification applications and a timetable for certification decisions.

Water Quality Standards, Chapter 10

- 401 KAR 10:001 "Definitions for 401 KAR Chapter 10" (effective December 2008)
- 401 KAR 10:026 "Designation of uses of surface waters" (effective July 2009)
- 401 KAR 10:029 "General provisions" (effective July 2009)
- 401 KAR 10:031 "Surface water standards" (effective July 2009)
- 401 KAR 10:030 "Antidegradation policy implementation methodology" (effective July 2009)

DOW re-codified the water quality standard administrative regulations from 401 KAR Chapter 5 to Chapter 10 in June 2008. Chapter 10:001 is a new regulation that provides definitions for other regulations promulgated under 401 KAR Chapter 10, including 401 KAR 10:026, 10:029, 10:030, and 10:031.

Chapter 10:026 lists the types of designated uses for surface waters of the Commonwealth, provides for re-designation of surface waters, describes the process for re-designation of surface waters, and lists designated uses for specific surface waters of the Commonwealth that have been assigned designated uses. The amendment to 10:026 creates a new table, Table B, which indicates specific locations (latitude/longitude and river mile) of 183 surface water intakes and thus the exact locations where domestic water supply criteria in 10:031, Section 6, are applicable. It adds 233 previously unlisted outstanding state resource waters and removes two (2) previously listed outstanding state resource waters because of faulty location records for federally threatened and endangered species. The amendment also removes seventy-four (74) surface waters from the previous table of Surface Water Use Designations that had only the default uses of Warm Water Aquatic Life, Domestic Water Supply, and Primary and Secondary Contact Recreation so that only waters with non-default uses (Outstanding State Resource Waters and Cold Water Aquatic Habitat) are listed.

Chapter 10:029 provides general provisions under

which water quality regulations operate to protect the surface waters of the Commonwealth. This administrative regulation provides for withdrawal of contaminated water, sample collection and methodology, and mixing zones. The purpose of this administrative regulation is to address the issues for water quality protection not covered in 10:026, 10:030, or 10:031. The amendment clarifies that, upon request by an applicant, the cabinet shall assign mixing zones and consider the geometric limits of such mixing zones.

Chapter 10:030 establishes a methodology to implement the antidegradation policy contained in 401 KAR 10:029 by establishing procedures to control point source water pollution in waters affected by that policy.

Kentucky first promulgated 401 KAR 5:030, antidegradation policy implementation methodology in 1995. The most recently approved, and currently effective, regulation was the subject of litigation that was resolved in September 2008. At that time, the U.S. Sixth Circuit Court of Appeals upheld in part, and remanded in part, Kentucky's regulation. The remand of 401 KAR 5:030 coincided with the 2008 triennial review of Kentucky's water quality standards. The amended regulations were tentatively scheduled to be heard as part of the October 2008 agenda of the Administrative Regulation Review Subcommittee. However, the Cabinet requested that consideration of the regulations be deferred each month in an effort to resolve the issues surrounding the antidegradation requirements in 401 KAR 10:030 (formerly 5:030).

The U.S. Sixth Circuit Court of Appeals upheld those parts of the commonwealth's antidegradation regulation that pertained to selection of waters that were afforded Tier II protection and remanded the parts of the regulation that pertained to six categorical exceptions of certain types of discharges from Tier II review. Five of the six exceptions were remanded by the Court on a finding that EPA did not have adequate information to determine that the exempted activities would not create more than 'de minimis' degradation. The sixth exception, for discharges from coal mining operations, was remanded because the regulation was at variance with the Cabinet's procedures for administering the antidegradation review and the Court determined that EPA had relied on "unenforceable commitments" in its approval of this exception.

Following the decision of the Sixth Circuit and after consulting with EPA, the Cabinet convened a workgroup consisting of the parties involved in the antidegradation litigation and other interested parties to resolve the court's remand. The workgroup met nine times, beginning in October 2008. After much consideration, the Cabinet removed five of the existing exceptions to Tier II review. In the proposed amendment, the cabinet allows for a 'de minimis' exception, which has been approved by the Court, and exceptions that do not authorize any new pollutant discharge beyond that previously authorized and thus the Cabinet believes cannot constitute additional degradation. The Cabinet also identified four categories of discharges for which antidegradation procedures will be addressed in the permits themselves or for which antidegradation requirements are satisfied by alternative protective processes.

Chapter 10:031 sets forth water quality standards for surface waters of the Commonwealth and the associated water quality criteria necessary to protect designated uses. This amendment updates water quality criteria to reflect scientific developments.

Regulations in the Promulgation Process

In addition to the regulations that have become effective in the last fiscal year, DOW has several regulation packages in the middle of the promulgation process.

Chapter 5 Regulation Updates

- 401 KAR 5:002 "Definitions for 401 KAR Chapter 5"
- 401 KAR 5:005 "Permits to construct, modify or operate a facility"
- 401 KAR 5:055 "Scope and applicability of the KPDES Program"
- 401 KAR 5:060 "KPDES application requirements"
- 401 KAR 5:065 "KPDES permit conditions"
- 401 KAR 5:080 "Criteria and standards for the Kentucky Pollutant Discharge and Elimination System"

Regulations in this package are being updated to reflect current federal standards. As with the drinking water regulations, DOW is citing the corresponding federal regulations when appropriate, instead of reproducing the narrative. In addition to keeping current with federal requirements, the amendment to 401 KAR 5:005 clarifies the setback requirements for individual residences, and provides specific details on the regulation of animal feeding operations that do not intend to discharge. The amendment alters the backup unit and power requirements so that the most stringent requirements only apply to discharges to the most sensitive receiving waters (Outstanding State Resource Waters, locations close to drinking water intakes, disappearing streams, and sinkholes). The level of redundancy required in the existing regulation is unnecessary to protect the integrity of receiving streams and is very expensive.

- 401 KAR 5:310 "Surface water permit fees"

This administrative regulation adjusts the fees codified in KRS 224.70-120 and creates fees for Kentucky No Discharge Operating (KNDOP) permits and general permits, which did not have fees established in statute or regulation.

Chapter 8 Regulation Updates

- 401 KAR 8:010 "Definitions for 401 KAR Chapter 8"
- 401 KAR 8:022 "Sanitary surveys"
- 401 KAR 8:075 "Consumer confidence reports"
- 401 KAR 8:510 "Disinfectant residuals, disinfection byproducts and disinfection byproduct precursors"
- 401 KAR 8:600 "Secondary surveys"

This regulation package continues the division's efforts to keep current with federal requirements. The regulations identified in the above list cite their federal counterparts rather than reproducing the narrative.

- 401 KAR 8:030 "Water treatment plant and water distribution system classification and staffing"

401 KAR 8:030 was amended to remove the operator certification program requirements, which will be in 401 KAR Chapter 11, and to clarify water plant and distribution system staffing, and to add a bottled water classification.

Information Technology Section

Tiered TEMPO Support

The RPPS branch has initiated a TEMPO tiered support system in order more efficiently support

DOW TEMPO users. TEMPO points of contact have been indentified for each of the division's six branches. These contacts will act as the Tier I TEMPO Support for the branch and/or section when there is a TEMPO issue. If they are unable to address the issue, they will be responsible for escalating the problem to the IT Support section (Tier II) through the Cabinet's electronic Help Desk system. This group will also be responsible for testing all new TEMPO builds. These contacts will also be working closely with the IT Support Section staff to manage their business process in TEMPO in an attempt to mimic the division's 2008 reorganization. The goal is to complete the TEMPO reorganization by the end of the fiscal year 2009-2010.

TEMPO Training

DOW has purchased computer screen recorder software to capture the processes that each program follows when using TEMPO. This software will be used to produce interactive training and support videos that will be made available to staff via the network and/or on DVD. The TEMPO points of contact will work with the IT Support section to create training video scripts that will be used in the production of these videos. IT staff will record and produce the videos. The intention is create a library of TEMPO videos that will be used to train new staff and to cross-train current staff on TEMPO at both the basic and advanced, program-specific levels.

Electronic Open Records Request (ORR) and ePay

In an effort to increase efficiency and reduce staff burdens, DOW has continued to develop electronic processes to support important business requirements like Open Records Requests (ORR). Under KRS 61.880(1), the division must make a decision to grant or deny an open records request within three working days after the request is received. In order to expedite the ORR process, a generic DOW open records request email account has been created. The email account, dowopenrecords@ky.gov, is posted on the division's website. Previously, the public was directed to email the DOW open records request contact at the work email address. Because these requests must be addressed within three business days, email coming to a specific person's email account presented logistic concerns. With the new system, the point of contact and a back-up contact have access to the open records email account.

DOW has implemented an ORR tracking system in TEMPO. All communications regarding ORRs are now maintained in TEMPO. This update provides the DOW records custodian and a back-up custodian access to the requests and all communications regarding requests. Implementing the TEMPO tracking system has introduced transparency into this important business process.

The final step in modernizing the ORR process will be to implement an ePay system. This system will expedite the submission of information back to the public as well as the processing of the ORR fees. The ORR ePay system will be available to the public via a link on the DOW web page. The DOW records custodian will be notified of an electronic payment immediately so that the records can be released expeditiously. By automating the fee payment process, DOW will provide a more efficient payment system to the public while saving time and resources. The IT Section anticipates that the ePay process will be completed on or before January 2010.

The Compliance and Technical Assistance Branch is the largest branch in the division and is currently staffed by 71 employees. As a result of the July 2008 re-organization, this branch includes the **Drinking Water Compliance and Technical Assistance Section** as well as the **Regional Field Offices.**

Drinking Water

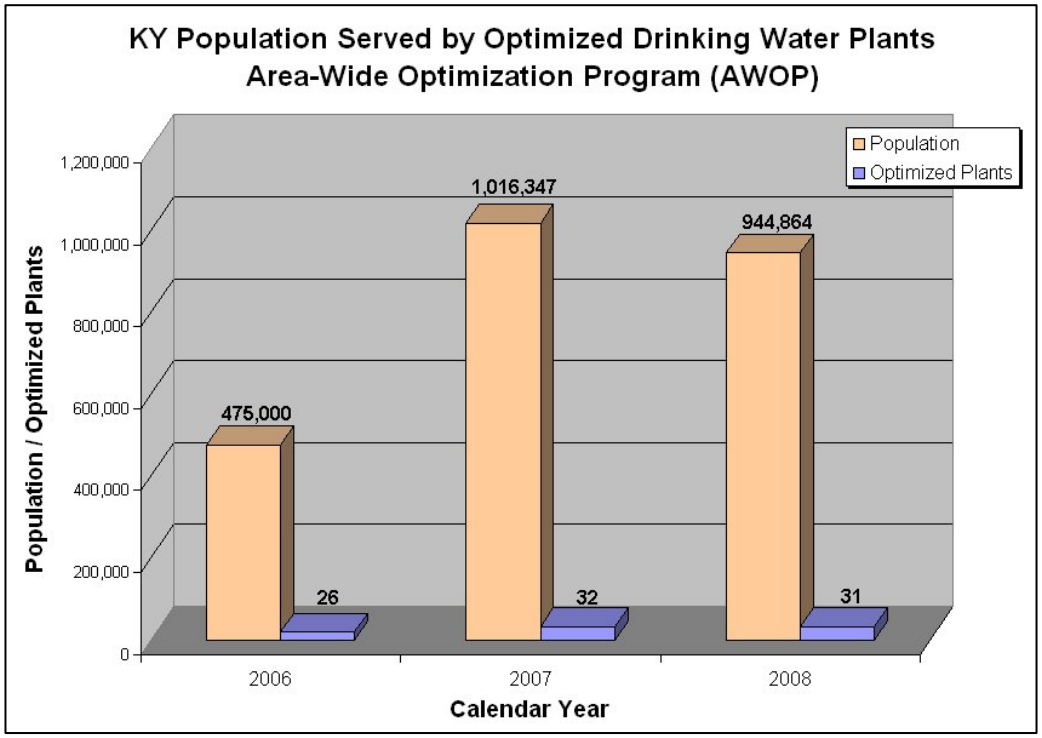
Area-Wide Optimization Program

The drinking water Area-Wide Optimization Program (AWOP) continued its focus on optimizing water plants for turbidity and microbial removal. As a result, over 900,000 citizens in Kentucky are provided with safer water from a microbial perspective.

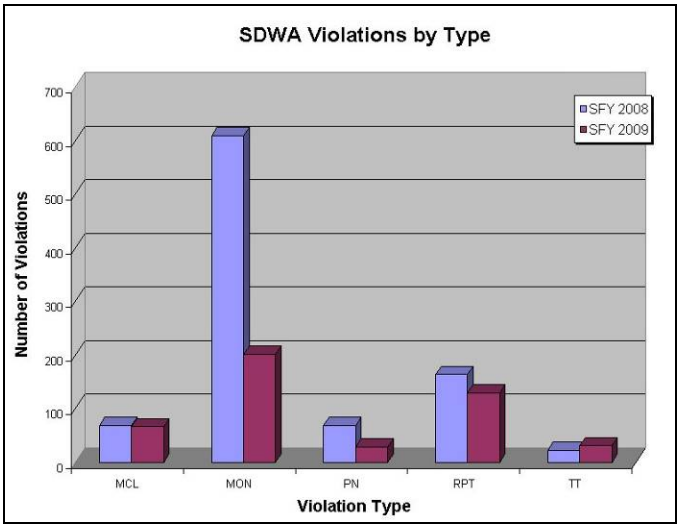
In September 2008, the Kentucky AWOP partnered with the United States Environmental Protection Agency (EPA) Technical Support Center in Cincinnati to take the microbial concepts and adapt them to disinfection by-product (DBP) control. Kentucky developed state criteria for ranking water systems based on DBP compliance and began a year-long training pilot project that involves six water systems. In addition, four water systems were able to save approximately $19 million by optimizing existing operations and treatment instead of installing costly infrastructure.

Safe Drinking Water Act Primacy and Regulatory Development

Ten revisions to 401 KAR Chapter 8 that incorporate federal Safe Drinking Water Act (SDWA) regulatory language were filed with the Legislative Research Commission (LRC) on November 15, 2008 and became effective on April



3, 2009. A second package of proposed regulations filed in January 2009 included regulations pertaining to laboratory certification and fees; these will become effective in July 2009. A third package of proposed regulations filed in May 2009 included sanitary surveys, secondary contaminants and three revised regulations from those finalized in April (addressing EPA comments and corrections) with an effective date expected in October 2009. Revised drinking water system classification and staffing regulations were filed in July 2009 in conjunction with the Division of Compliance Assistance which file the drinking water operator certification components. The final package of proposed regulations for drinking water will include regulations pertaining to public water system capacity development and requirements and specifications for public water system engineering plans and design, both scheduled for late 2009.



Due to these changes in federal and state regulations, Kentucky must submit to EPA primacy packages for all the various public water supply rules. There are nine primacy packages that will be filed as soon as the revised Kentucky regulations are final in late 2009; the remaining primacy applications will be re-filed with EPA in 2010.

Kentucky Public Water System Compliance Rates

Kentucky's SFY09 performance measures for compliance with the SDWA public water supply program include the percent of the state population receiving drinking water meeting health-based standards (MCLs) and the percent of community water systems that deliver water meeting health-based standards. During state FY09, 87% of KY's population received water meeting health-based standards—this compares to 89% for the FY 2007 – 2008. Drought-related non-compliance with disinfection by-products (DBPs) and turbidity removal affected the lower percentage for this fiscal year. As of July 31, 2009, the compliance percentage is 93%.

During state SFY09, 456 drinking water violations were issued with 78.7% of those related to monitoring and reporting (M&R); this compares to 933 violations issued for the previous year with 90.2% related to M&R. The higher percentage for the previous fiscal year was the result of additional requirements imposed by new regulations.

DOW successfully implemented Web-release version 2 of the State Drinking Water Information System (SDWIS) that incorporates compliance and inventory aspects of recently-promulgated SDWA regulations. As of June 30, 2009, the drinking water program had submitted compliance correctly and on-time to EPA for ten consecutive quarters.

The drinking water program continued early implementation efforts associated with the Stage 2 Disinfection By-Product, Long Term 2 Surface Water Treatment and Groundwater Rules. This has involved data tracking, report approvals, SDWIS integration and enforcement activities (in

conjunction with EPA Region 4).

DOW Regional Office	Number of Surface Water Sanitary Surveys
Frankfort	18
Hazard	6
Morehead	13
London	12
Florence	4
Columbia	7
Louisville	8
Bowling Green	9
Madisonville	10
Paducah	4
Total	**91**

Integration with other Agencies and regulated entities

DOW personnel continued to work with the Public Service Commission (PSC) regarding the coordination of common drinking water issues, such as inspections, boil water advisories (BWAs) and unaccounted water (water loss). DOW and PSC are pursuing "read-only" access to the Department for Environmental Protection's permit database (TEMPO) to PSC staff, thereby enhancing the ability of these agencies to share information and avoid conflicts. Currently, PSC regulates approximately 150 drinking water systems.

The division received continued support from the Drinking Water Advisory Committee, an informal workgroup comprised of regulated entities, professional organizations and related state agencies that advises DOW on issues relating to the drinking water program. Ad hoc subcommittees associated with the Drinking Water Advisory Committee that conducted work on various issues in 2009 included Compliance, Engineering, and Capacity Development. In conjunction with the Division of Plumbing, a new subcommittee on cross-connections was under consideration at year's end.

Drinking water-related training events were conducted with the PSC, Kentucky Rural Water Association (KRWA), Kentucky Water and Wastewater Operator Association (KWWOA) and the Kentucky-Tennessee section of the American Water Works Association (AWWA). In addition, several intra-divisional trainings were conducted for central office staff. An Annual Training Meeting was also held in October 2008 for all Compliance and Technical Assistance Branch personnel.

Laboratory Certification Program Update

DOW certifies laboratories that conduct analysis relating to monitoring requirements under the Safe Drinking Water Act public water system program. The DOW certified a total of 118 laboratories, including microbiological and chemical labs (44 microbiological laboratories and 74 chemical laboratories).

The division also conducts audits of the certified labs to ensure compliance with their certifications. DOW performed seven (7) chemical audits in 2009 (cf. two chemical audits in 2008). The chemical lab audits are performed by DOW's Laboratory Certification Officer. Microbiological lab audits are performed by a third-party auditor (Morehead State University) as directed by the DOW Laboratory Certification Officer. In 2009, 44 microbiological audits were conduct, which equaled the number conducted in 2008.

Database Projects

An individual laboratory's certified analyte-method pair are entered into the SDWIS/SWR2 database to allow compliance rule managers to determine if a laboratory is certified for that specific analyte-method pair. Work is underway to store laboratory certification hardcopy correspondence, including certificates, analyte lists and letters of deficiency, in TEMPO. A separate Laboratory Certification

Database has been constructed to store all laboratory performance test (PT) sample results and verify compliance with 401 KAR 8:040 and SDWA

On-going Challenges

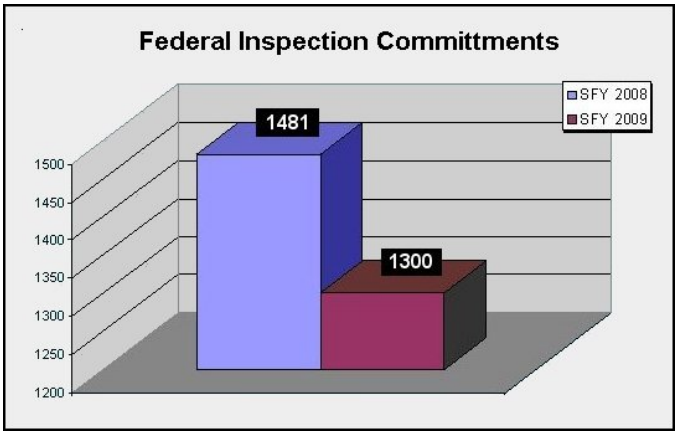
Several challenges remain in the drinking water program, primarily the number of SDWA regulations to be promulgated and implemented in response to new federal rules, and related database issues. The suite of DBP, surface water treatment and groundwater rules has created early implementation activities that are extensive and costly for water systems and the regulatory agency. DOW has been taxed to complete a myriad of primacy packages while streamlining state regulatory language. Federal database updates are lagging behind rule implementation, and some states are creating program databases outside the federally supported database in order to track new rule requirements.

The Sanitary Survey process will be expanding to include groundwater systems beginning in December 2009. This adds an additional 52 systems annually to the current sanitary surveys conducted for surface water systems. In 2009, the DOW conducted 91 sanitary surveys statewide.

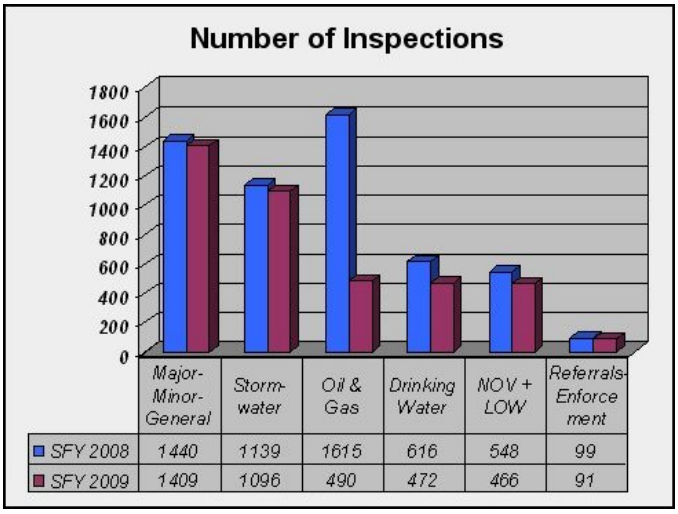
The drinking water program continues to be challenged to provide electronic submittal ability for Monthly Operation Reports (MOR). Issues with the ePortal are still to be resolved

Regional Offices

Training, equipping and focusing management are keys to quality with consistent inspections, technical assistance and enforcement. Federal program requirements mandate reporting percentage of inspections at permitted facilities.

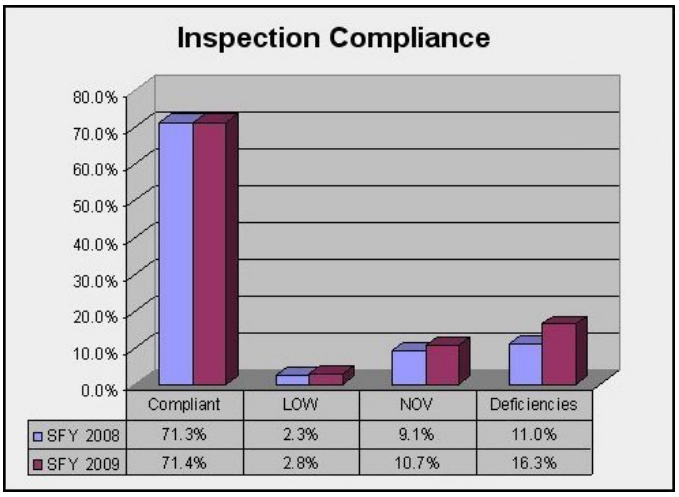


The EPA 106 grant work-plan commitment is based on the federal year October 1 thru September 30 (FFY). As of June 30, 2009, the percentage of completed inspections toward this commitment is 73.85%. In 2008 and 2009 FFY federal commitments were the same with the following requirements: 50% majors (WWTPs with 1 MGD capacity or greater), 20%- minors (WWTPs with <1 MGD capacity), 10% of generals (General Permits such as transportation facilities, individual WWTPs, etc.), 12% of permitted Stormwater Construction sites, 10% of permitted Stormwater Industrial sites, 20% of MS4s, 50% of CSO communities, and 20% of permitted Concentrated Animal Feeding Operations.

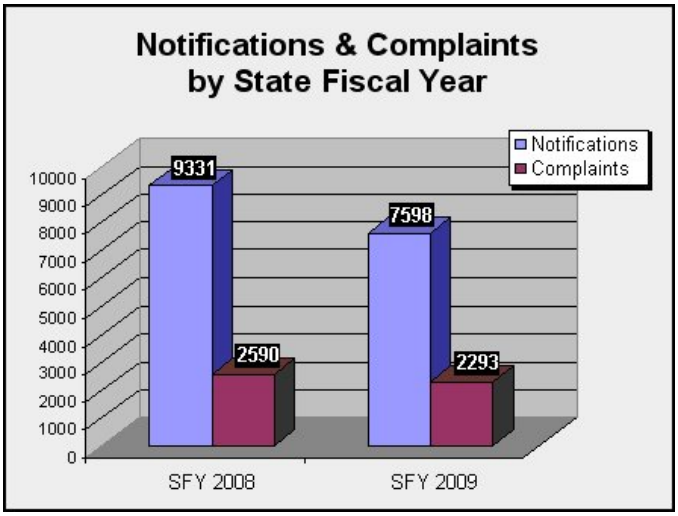


State regulations also mandate inspection of facilities under state programs. DOW field inspectors working out of ten regional offices conducted 3,467 inspections in SFY 2009.

Inspections include wastewater treatment facilities, public water systems, and facilities operating under general permit coverage, such as stormwater construction, industrial, agricultural, residential, and oil & gas operations. Inspections resulted in the issuance of 370 Notices of Violation and 91 referrals to the Division of Enforcement for additional administrative action and civil penalties.



Inspectors for the division require broad programmatic knowledge and experience in addressing compliance issues, including necessary assistance and encouragement. Although since SFY 2008 a significant decrease in the number of inspectors has occurred, the division has continued to meet its inspection obligations under federal grant commitments. In 2009, field office inspectors investigated a total of 2293 complaints; a signficant percentage of complaints resulted in the recognition of violations of one or more regulations. Several regulations require permitted facilities to notify DOW when certain disruptions occur. Notifications consist primarily of wastewater bypasses/overflows and drinking water main breaks, low pressure or loss of pressure in a drinking water distribution system, loss of disinfection or other treatment disruption. The division received 7598 required notifications in SFY 2009.



A large portion of the workload for DOW regional field office staff is to respond to complaints and notifications. Responses can range from the mundane to extensive commitment of resources (e.g. ice storm response). The division is challenged in planning for such issues, especially significant issues because of the unexpected nature of the problem. However, despite significant staffing shortfalls especially in the regional field offices, division inspectors continue to respond to complaints, emergencies, and other matters in a timely and professional manner.

2008 Drought Impacts

The 2008 drought was most severely felt by Magoffin County in southeast Kentucky. Due to low to non-existent flows in the head waters of the Licking River in August through November, the city of Salyersville had to use two “emergency back-up” wells in addition to treating the poor

water quality in the river. The Salyersville water treatment plant struggled with turbidity removal and disinfection by-product control as well as operational issues at the plant. Two interconnections with another water system in the area were untested and incomplete during this timeframe. As a result of the diminishing water supply and the effects on the consuming public, both Salyersville and Magoffin County Water District received a Governor's Emergency Declaration.

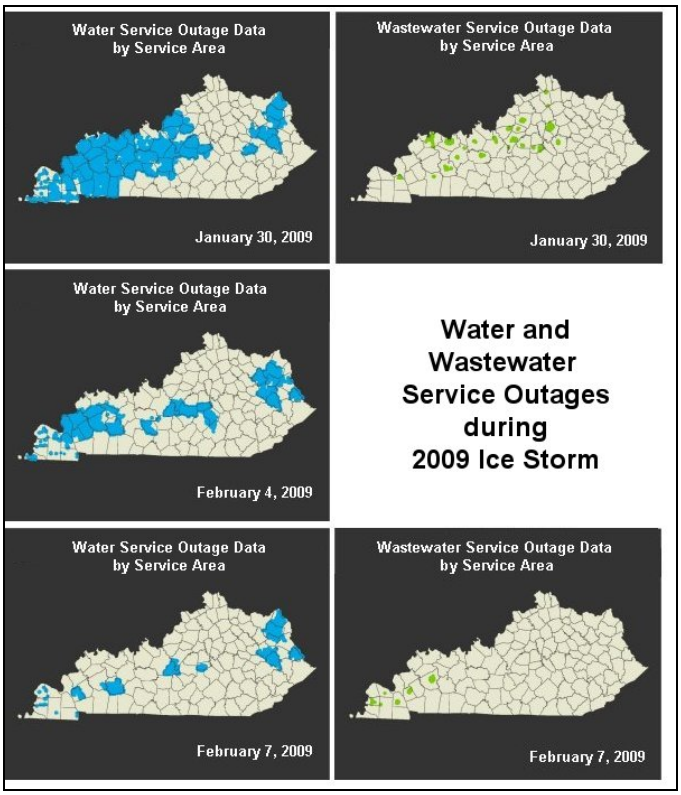
DOW personnel assisted with tracking river flows, assessing source water capacities, evaluating treatment options, developing division-level press releases and coordinating drought response with the Public Service Commission and the Department for Public Health. The efforts crossed three Branches in the Division: Compliance and Technical Assistance, Watershed Management and Water Infrastructure. Rain in late November alleviated the situation.

January 2009 Ice Storm

On January 26, 2009, an ice storm impacted the entire state - the counties west of Interstate 65 received the most damage. Electrical power and communication were hardest hit; a lack of power translated into drinking water outages and wastewater overflows. At the height of the storm:

- 93 drinking water systems were affected
  - 64 without water
  - Including 50 systems that could not be contacted
- 233,797 people without water
- 21 systems requested 43 generators
- Initially 24 boiled-water advisories (BWAs) were issued to protect consumers from microbial contamination
  - By February 19th, 72 BWAs had been issued and lifted

During the storm and its aftermath, two DOW Regional Offices were inoperable with eight staff lacking office capability as well as dealing with no power at home. Seventeen Regional Office staff members were indirectly affected. Thirty-one DOW staff members were involved in the ice storm response. From the both Central Office and other Regional Offices, six staff members responded to the affected area for a 7-10 days duration. During the three-week long response, status reports were provided three times per day to the Kentucky Emergency Operations Center. Working as a team, the efforts of DOW staff provided the necessary information and assistance to minimize impacts on both drinking water and wastewater.



For the duration of the ice storm, approximately 102 drinking water incidents (BWAs, power outages, line breaks) were recorded by DOW (with some overlap with the wind storm in mid-February). Regarding wastewater, 552 incidents were reported, including power outages, manhole overflows and treatment bypasses.

Emergency Response Incidents

Whitesburg (November 2008 and February 2009)

Whitesburg Water Works was impacted twice within a six-month period by contamination occurring in the source water, the north fork of the Kentucky River. Incident responses were a joint effort between the Department's Environmental Response Team (ERT), Hazard Regional Office, and Drinking Water Compliance and Technical Assistance Section. The first incident occurred in November 2008 involving total petroleum hydrocarbons contamination in the Kentucky River, which was discovered because of its impact on the drinking water treatment plant and customers of Whitesburg. DOW issued a consumer advisory and monitored the water in the river and distribution system until safe levels were attained.

The second incident occurred in February 2009 involving petroleum contamination in the Kentucky River, once again impacting the drinking water plant. As in the prior incident, DOW issued a consumer advisory and monitored the water in the river and distribution system until safe levels were attained.

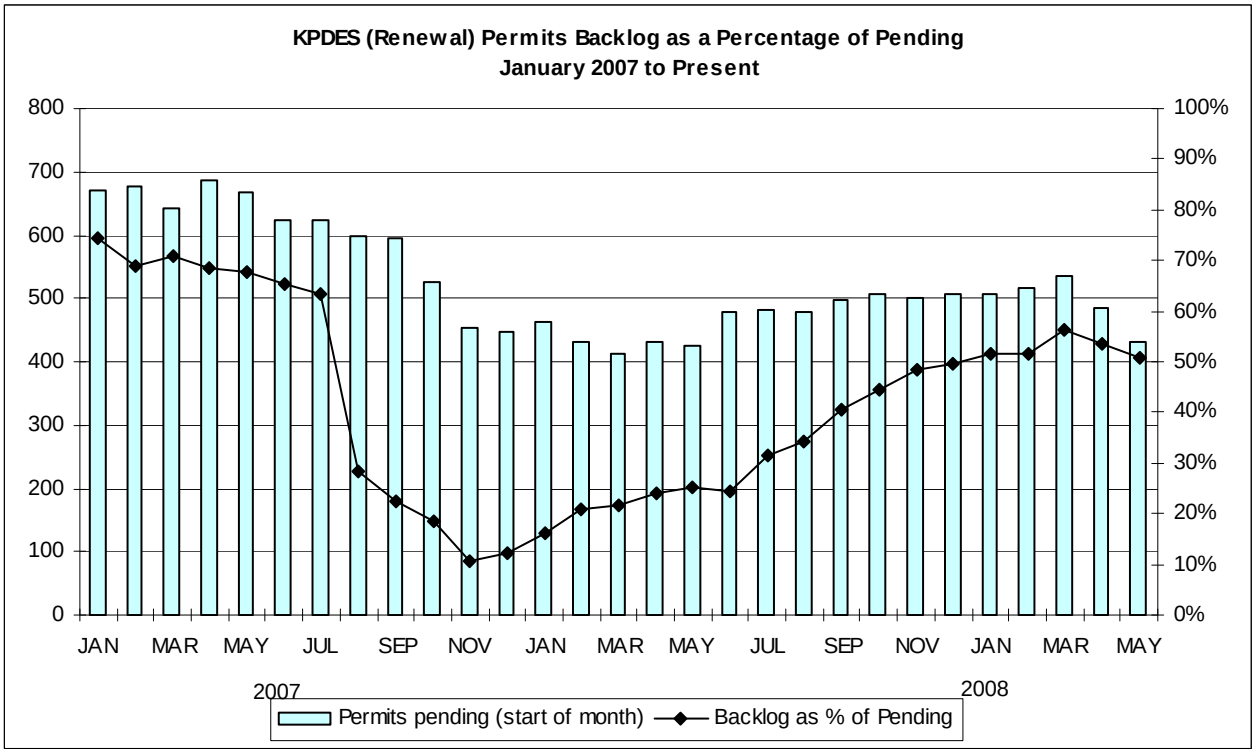
Georgetown Herbicide Incident (May 2009)

A distribution line in Georgetown was relocated on May 21, 2009 to allow for another water main extension project. When the line was returned to service and flushing initiated, an accidental backflow of an herbicide (Pendimethalin) occurred from an adjacent property, with the herbicide entering the distribution line. The line was immediately removed from service. Georgetown Municipal Water and Sewer and DOW quickly developed a joint plan of action. The line was immediately flushed for several hours. Three samples were taken along the distribution line (one sample up-gradient from the cut, one sample at the cut and one sample at the end of the distribution line). Coordination between Homeland Security and Emergency Response Agency for Toxic Substances and Disease Registry was established to set acceptable remediation limits. DOW established the method and quality control requirements for the laboratory to use a research method to analyze for the herbicide in drinking water. The sample results were all below detection limits and the affected distribution main was returned to service.

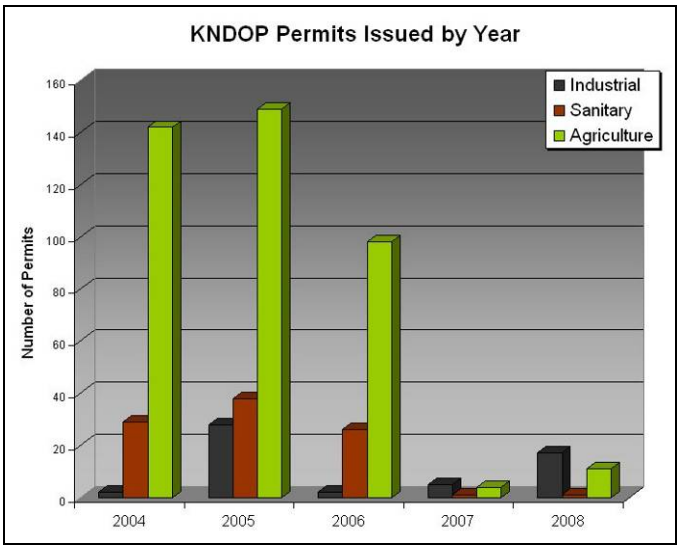
The Surface Water Permits Branch (SWPB) consolidates many of the activities associated with issuing permits that have a direct impact on surface water. The branch issues operational permits for wastewater and storm water discharges, construction permits for new and expanded wastewater treatment plants and floodplain construction permits. Additionally, this branch implements compliance programs that are closely integrated with the permits it issues, such as the wet weather compliance program (the CSO/SSO program, the municipal separate storm sewer (MS4) program, the pretreatment program, and the whole effluent toxicity (WET) program). SWPB consists of five sections: the **Construction and Compliance Section**, the **Operational Permits Section**, the **Wet Weather Section**, the **Floodplain Construction Section** and the **Permit Support Section**.

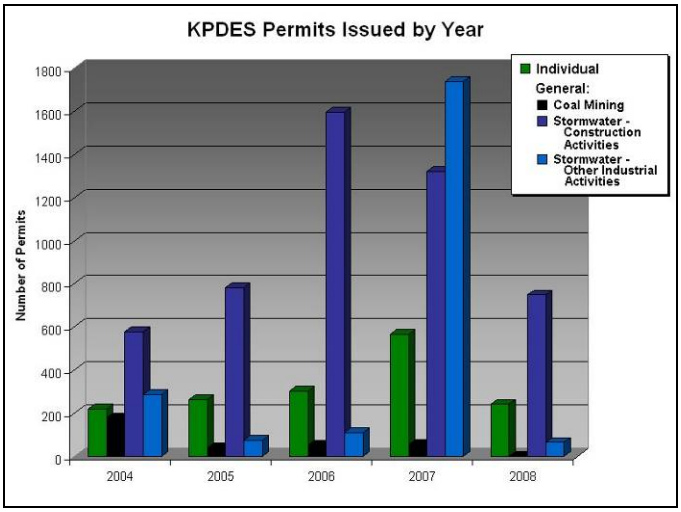
KPDES Permits

As can be seen in the table below, for FY09 the percentage of backlogged permits increased by approximately 15% to an overall total of 50%. Since this indicates a negative gain in terms of our goal of reaching zero backlog of permits, this must be understood in context. There are approximately 10,000 active KPDES permitted facilities operating in the Commonwealth. This number fluctuates month-to-month, based on new permits being issued and some permits being terminated. Of these active permits, there are only 1,789 individual permit holders. The remainder of these facilities are covered under KPDES general permits. The three general permits which have the greatest number of coverages are the Coal General Permit (Coal GP), the General Permit for Stormwater Discharges Associated with Construction Activities (KYR10)



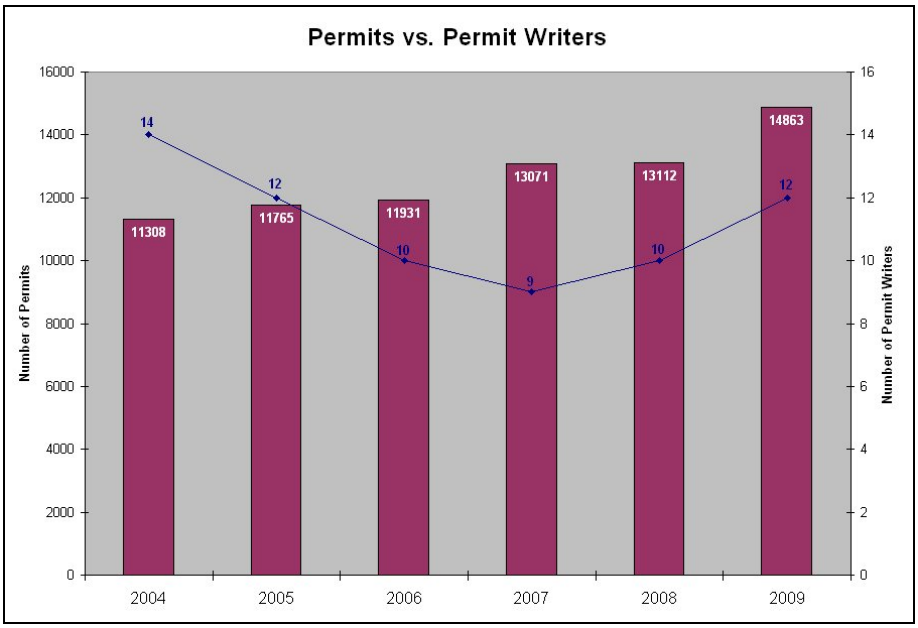
and the General Permit for Stormwater Discharges Associated with "Other Industrial Activities" (KYR00). Both the KYR00 for "Other Industrial Activities" and the KYR10 for construction activities expired on September 30, 2007. The Coal GP expired on 12/31/08. These three categories comprise more than 50% of the KPDES permitted universe. In SFY09 we were able to re-issue the Coal GP and KYR10, without legal challenge to the permits. This represents significant progress in





increasing customer service, as well as enhanced protection of the environment through the implementation of an appropriate current permit coverage.

A five-year low in the backlog percentage was achieved in November 2007. This backlog progress was achieved by the authorization of consistent block payments of overtime to staff who worked on the permit reviews. In addition, the division



employed the use of multiple contractors to assist with permitting issues. The focus of the entire branch at that time was to reduce the operational permitting backlog. In SFY09 we worked on a more diverse goal, and the numbers reflect this. Finally, as we remain under our personnel cap of positions, we refocus efforts in the individual backlog area moving into SFY10.

Cross Training

The division has made considerable progress in cross training employees to provide flexibility in technical review. Personnel from the Construction and Compliance Section have been assisting the Water Infrastructure Branch in reviewing projects funded by the American Recovery and Reinvestment Act of 2009 funding. Also, two additional persons have been added to the operational permitting section to be trained in permit writing, one of these coming from RPPS branch and one from Water Infrastructure Branch. The division has also planned and prepared training sessions to share with all branches of DOW on Antidegradation Regulation and implementation and the construction stormwater program. Employees within the program have been active participants in the GIS internal training program.

Fees

In order to bring additional resources to the division to ably address the KPDES permit backlog, a fee regulation has been proposed to adjust the KPDES permit fees which were last updated in about 1983. The division's efforts are intended to more fully recover the cost of the KPDES permit program. The division worked extensively with stakeholders toward the promulgation of this regulation. In that process, the division significantly adjusted downward the proposed fees, resulting is a final proposal that will recover 20 to 25% of the cost of the KPDES permit program. The regulation has been through the public comment period and will before the Administrative Regulation Review Subcommittee in October. The division anticipates that this regulation would take effect at the by the end of 2009.

Gulf Hypoxia

In response to the Gulf Hypoxia initiative at EPA, the division has been requiring monitoring for both Total Phosphorous and Total Nitrogen on all municipalities. In appropriate situations, the division has also imposed a 1 mg/l average concentration limit for Total Phosphorous. These requirement are consistent with the 106 grant commitments to EPA Region IV.

Oil and Gas Registrations

The division has had discussions with the Division of Oil and Gas Conservation regarding 401 KAR 5:090. At this time, there has not been a final determination on how to proceed with the oil and gas registration program and "transport-off-site" letters.

Permits on the Web

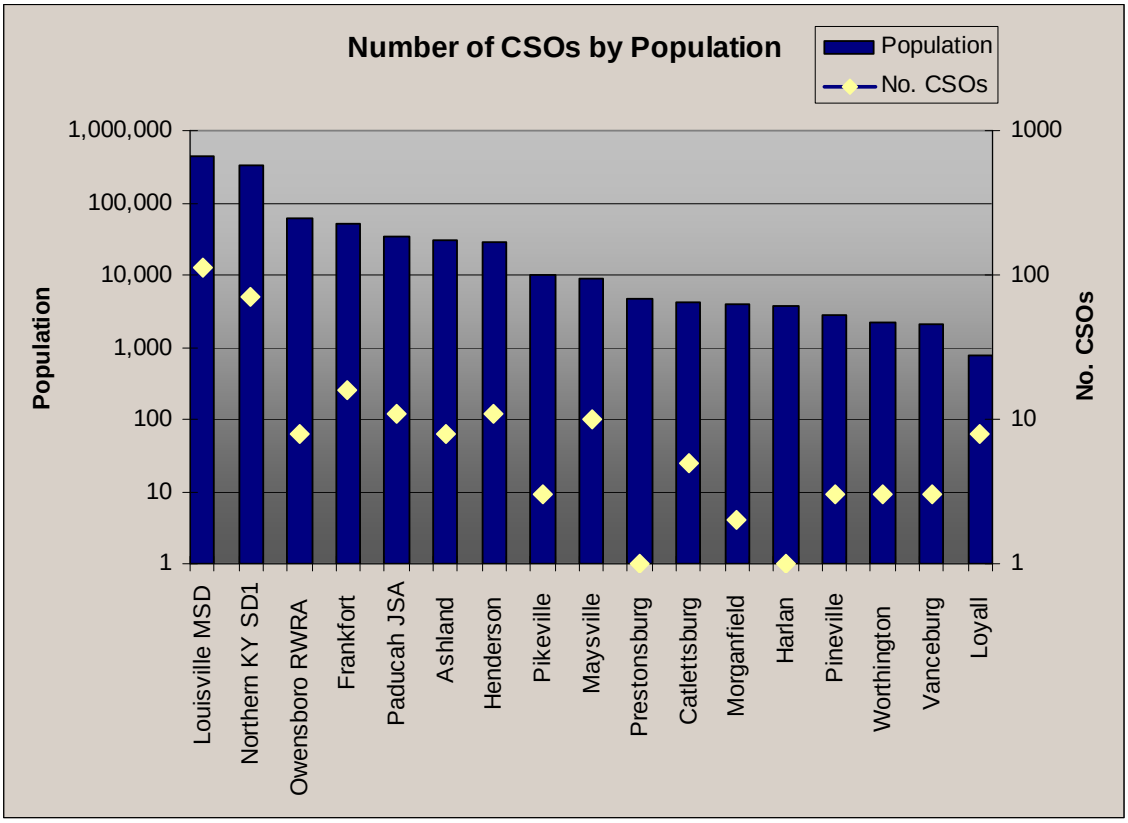
As mentioned in the discussion of the KPDES permitting backlog, the DOW has been working on the re-issuance of general permits that cover a significant amount of the KPDES permitted universe. In conjunction with this effort, we are updating the web pages. As of the writing of this report, there is a general permit page that has been updated to replace the old stormwater and coal web pages. SWPB is also in the process of identifying outdated information and updating this on the web.

Wet Weather Section

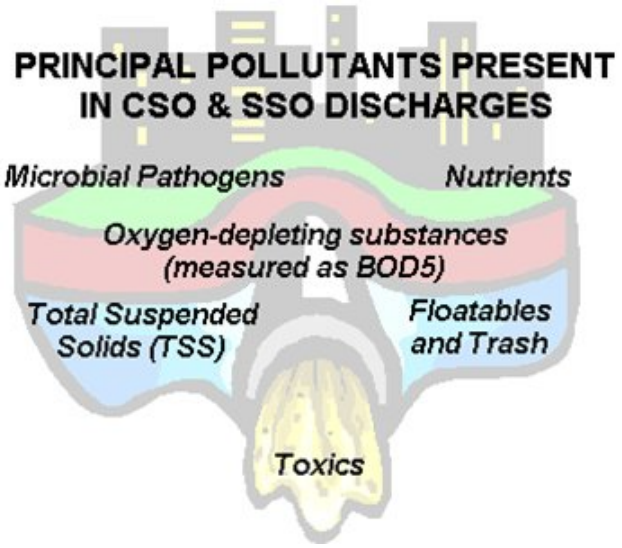
CSOs/SSOs

Pursuant to the Clean Water Act (CWA) and KRS Chapter 224, as well as the regulations promulgated pursuant thereto, and EPA's 1994 Combined Sewer Policy, the U.S. EPA and Kentucky's Energy and Environmental Cabinet have undertaken an initiative to minimize the impacts of, and eliminate whenever possible, wet weather overflows at permitted Combined Sewer Overflow (CSO) outfalls. Additionally, this initiative seeks to completely eliminate Sanitary Sewer Overflows (SSOs) as well as any dry weather overflows which may be active in a collection system, since both releases violate the CWA and KRS and related regulations.

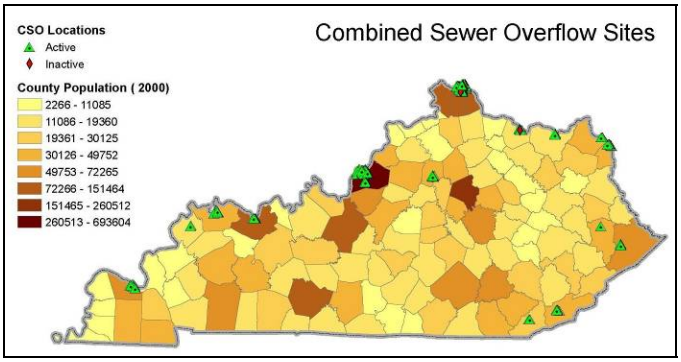
The 1994 CSO Control Policy seeks to ensure that CSOs are caused exclusively by wet weather; that all wet weather discharge points are brought into compliance with technology-based and water quality-based requirements of the CWA; and that the human health and environmental impacts of CSOs are minimized. The means to this end are the CSO Nine Minimum Controls, which provide short term compliance with the CWA and 1994 Policy, and Long-Term Control Plans for those CSOs which can not be eliminated in the near term. Additionally, this initiative targets SSOs and other unauthorized discharges. Both of these are sources of significant impacts on human health, water quality, aquatic biota and the ability of the state's sewer infrastructure to adequately collect and treat wastewater. To this end, the consent judgments entered for Kentucky's 17 CSO communities



include Sanitary Sewer Overflow Plans (SSOPs), Sewer Overflow Response Protocols (SORPs) and self-assessments in keeping with the EPA Capacity, Management, Operations and Maintenance (CMOM) program.



The past year has seen an unprecedented level of intensity in the programs of DOW's Wet Weather Section as Kentucky's Combined Sewer Overflow (CSO) communities implement their consent agreements with the Commonwealth of Kentucky and the U.S. Environmental Protection Agency.



In the 2009 state fiscal year, the Wet Weather Section reviewed and commented on submittals from Kentucky's 17 CSO communities, addressing the following consent decree issues:

- CSO Nine Minimum Controls (NMC) compliance: identified in the CSO Control Policy as minimum technology-based controls that can be used to address CSO problems without extensive engineering studies or long-term control measures. The Wet Weather Section has received, reviewed and offered comments on approximately 13 of the 15 remaining Nine Minimum Controls compliance reports during the fiscal year ending June 30, 2009. Most of those are now approved for implementation.

- Sanitary Sewer Overflow Plans (SSOPs): containing priorities, schedules and other details related to the elimination of Sanitary Sewer Overflows, which are illegal discharges according to the Clean Water Act. The Wet Weather Section has received four (4) SSOPs during the fiscal year ending June 30, 2009 and has reviewed and offered comments regarding three of those plans. Additional SSOPs may be required of other CSO communities during the coming fiscal year, and among the universe of non-CSO communities which are experiencing wet weather compliance problems; the Wet Weather Section is currently monitoring the implementation of several dozen SSOPs.

- Capacity, Management, Operations and Maintenance (CMOM) self-assessments: All 17 of Kentucky's CSO consent agreements as well as numerous non-CSO consent agreements require the submittal of a CMOM self-assessment which addresses

dozens of programs which sewer utilities should have in place with the goal of minimizing or eliminating overflows from sewers. The Wet Weather Section has reviewed and commented on over 30 CMOM submittals during the year, since this activity, probably more than enforcement or engineering controls, will, over time, yield significant reductions in the frequency, duration and volume of overflows in sewer utilities throughout the Commonwealth. In fact, CMOM requirements will likely be increasingly reflected in municipal KPDES permits in the next several years.

- Capacity, Management, Operations and Maintenance (CMOM) self-assessments: All 17 of Kentucky's CSO consent agreements as well as numerous non-CSO consent agreements require the submittal of a CMOM self-assessment which addresses dozens of programs which sewer utilities should have in place with the goal of minimizing or eliminating overflows from sewers. The Wet Weather Section has reviewed and commented on over 30 CMOM submittals during the year, since this activity, probably more than enforcement or engineering controls, will, over time, yield significant reductions in the frequency, duration and volume of overflows in sewer utilities throughout the Commonwealth. In fact, CMOM requirements will likely be increasingly reflected in municipal KPDES permits in the next several years.

- Interim Long-Term Control Plans (ILTPC): Approximately six of Kentucky's CSO consent agreements featured interim long-term control plans, or framework documents, which defined the parameters of the final LTCP to facilitate agreement between the permittee and the Commonwealth that the anticipated LTCP would produce the desired results in terms of overflow

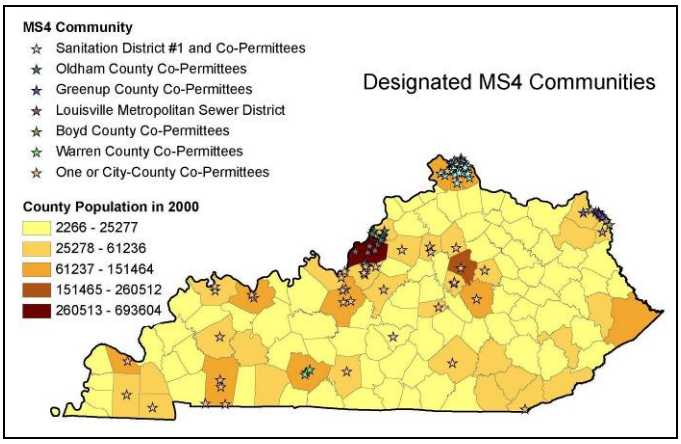
- Abatement and compliance with Kentucky's water quality standards. All of these submittals were reviewed during the 2009 fiscal year, and comments were transmitted to the affected CSO communities suggesting acquiescence with the submittals or requiring that some information be resubmitted. Meetings, written correspondence and conference calls are ongoing with these communities in an effort to provide the submitting.

- LTCPs: Fiscal year 2009-2010 will see a profusion of final LTCPs as CSO communities adopt their final strategies for CSO abatement and control. In FY 2008-2009, review of the first three LTCPs began, and reviews of the remaining submittals will occur in FY 2009-2010.

Municipal Separate Stormwater Sewer Systems (MS4) Program

Significant progress has been made in SFY09 in the Municipal Separate Storm Sewer System (MS4) program. This program has 42 general permit holders and two individual permit holders representing approximately 100 communities in the Commonwealth, the Kentucky Transportation Cabinet, and state universities. The two individual (Phase I) permit holders are Louisville MSD and Lexington Fayette Urban County Government, having been issued originally in 1993 and 1994 respectively. These permits are currently on their third permitting cycle.

In fiscal year 2009 the MS4 program reviewed annual reports from all of the MS4 communities covered by the 42 General Permits coverages. The division prepared a guidance document for the Phase II MS4 communities entitled "Phase II Stormwater Quality Management Plan Preparation Guidance." The division met with all but two of the MS4 communities in preparation for the Stormwater Quality Management Plan (SWQMP) submittals, each meeting included the aforementioned guidance document and showing the MS4 communities maps that detailed the impaired waterbodies located in their jurisdiction.



Division personnel reviewed Stormwater Quality Management Plans (SWQMP) submitted by the MS4 communities in preparation of the new General Permit for Phase II MS4s. The division issued the Lexington Fayette Urban County Government's Phase I Individual MS4 permit, which had been expired since May 31, 2007. As noted above, the division sent to public notice in July the Phase II MS4 General Permit, which had been expired since December 31, 2007. The draft of this general permit public notice expired on August 19, 2009. The division is preparing a response to comments document and awaiting comments on this permit from EPA Region IV. A longer-term goal is to encourage and assist several local MS4 program to improve their MS4 programs as a means to operate as a Qualified Local program under the MS4 program.

National Flood Insurance Program

The National Flood Insurance Program (NFIP) is a volunteer program based on an agreement between the Federal Government and local communities. In exchange for adopting and enforcing a flood plain management ordinance, federally-back flood insurance is made available to property owners throughout the community. NFIP provides maps and regulatory basis for local floodplain management. The U.S. Congress established the NFIP with the passage of the National Flood Insurance Act of 1968.

Currently in Kentucky there are 328 participating communities, 22,260 flood insurance policies with $2.8 billion in coverage. The past year has seen approximately 18,414 claims amounting to approximately $213 million.

Benefits of the program include making flood insurance available to anyone in a participating community, reducing exposure to property damage and loss of life, making available federal grants and/or loans, disaster assistance and mortgage insurance available to those who qualify, availability of Flood Insurance Rate Maps (FIRMs), identification of high-risk areas whereby local regulatory control can be applied, and enhanced property values and growth potential by requiring safe design and construction techniques for new development.

Failure of a community to participate in NFIP results in flood insurance no longer being available in community; residents cannot purchase or re-new flood insurance policy. Federal grants or loans from

any federal agency may not be made available for new developments in the floodplain, and federal or state disaster assistance cannot be provided for the permanent repair or reconstruction of insurable buildings damaged from flooding. In addition, federal mortgage insurance may not be made available in flood-prone areas, and communities are not eligible to apply for hazard mitigation grants. The Flood Insurance Rate Map (FIRM) will go effective regardless if a community participates in the program.

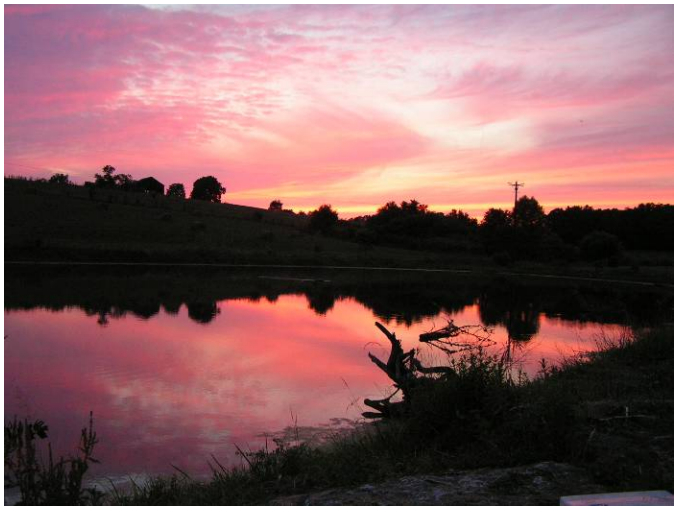
The goals of the NFIP are to reduce loss of life and property caused by flooding, reduce rising disaster relief costs caused by flooding, and make available federally backed flood insurance coverage to property owners. To accomplish the goals of the NFIP communities must require new construction and substantial improvements to be flood resistant; guide future development away from flood hazard areas; transfer flood-loss costs from taxpayers to floodplain property owners, and; prohibit new development in designated floodways that would increase flood heights.

The Federal role in the NFIP is to identify risks using FIRMs; establish development/building standards, and provide affordable flood insurance coverage.

The State role is that DOW serves as the State Coordinating Agency, to establish development/building standards. The state NFIP Coordinator in DOW provides technical and program assistance, ordinance review, assist with CRS program, conducts training, provides community assistant contacts (CAC) and performs community assistant visits (CAV), and submits community reports to FEMA

The local role in NFIP is to adopt and enforce Flood Damage Prevention Ordinance, appoint a Floodplain Administrator, utilize a floodplain development permit process, collect design certifications & elevations, maintain records, conduct field inspections, monitor status of community's FIRM, and notify FEMA of alterations or relocation of Special Flood Hazard Areas (SFHAs).

In 2009, Kentucky had six (6) new community enrollments in the NFIP. DOW conducted four (4) Community Assistance Visits: 4, and assisted FEMA with 3 other CAVs. DOW proved assistance to 27 communities and conducted two statewide trainings in 2009.



The Water Infrastructure Branch (WIB) is comprised of five sections that work together to ensure water infrastructure is properly planned, designed and operated.

The Wastewater Planning Section is responsible for reviewing regional planning documents for municipal (public) facilities, as required by 401 KAR 5:006. Reviewers look for efficiency through regionalization and application of the best available technology with the primary focus on environmental and cost effectiveness.

The Engineering Section's primary role is to review the engineering design plans for water and wastewater infrastructure and ensure their conformance with applicable regulations and ten-states engineering standards. The review process includes both administrative and technical elements.

The State Revolving Fund & Special Appropriation Section is primarily responsible for the administrative functions of the Clean Water and Drinking Water State Revolving Funds and the EPA Special Appropriation Grants. This entails working with the planning and technical sections of the Water Infrastructure Branch to commit grant and loans funds for drinking water and wastewater facilities.

The Drinking Water Capacity Development Section assesses public water systems' financial, managerial and technical capacity to deliver safe water to their customers consistently and at an affordable rate. Members of the section conduct sanitary surveys on all the public water systems according to a set schedule. Systems that lack capacity get extra attention from staff to build up their capacity in order to protect public health and ensure compliance with the Safe Drinking Water Act.

The Dam Safety and Floodplain Compliance section is primarily responsible for inspecting and permitting of dams and providing oversight in identifying and resolving floodplain compliance issues. Staff inspect between 200 and 300 dams a year. They also investigate and handle remedial actions on cases of construction in floodplains without the appropriate permits or violation of floodplain permit limitations.

WIB delivered solid performance last year; branch achievements include:

1. The engineering section maintained a zero permit backlog.
2. The U.S. EPA accepted Kentucky's Drinking Water Capacity Development Strategy, which is intended to improve the capacity of water systems throughout the state.
3. The Capacity Development program managers completed 97 sanitary surveys and provided PWS with crucial guidance for improving their managerial and financial capacity.
4. The Dam Safety Section completed 278 inspections.
5. The passage of the American Recovery and Reinvestment Act of 2009 created more work for the branch, but our staff stepped up their efforts and met the challenge. A project priority list was developed, the stimulus recipients received the proper training and assistances, and projects are moving ahead.

Despite the above outstanding achievements, the branch continues to explore better strategies for dealing with the following challenges:

1. The backlog of floodplain compliance cases. Even though the backlog of unresolved cases has dropped from 300 to just fewer than 140, there is a lot of room for improvement. The Dam Safety and Floodplain Compliance Section will try a couple of different approaches for dealing with this backlog over the next 12 months with hopes to eliminate it and prevent its recurrence.

2. Revising the Wastewater Planning Regulations (401 KAR 5:006). These regulations need to be updated very soon in order to establish consistency with the State anti-degradation law, and to clarify the environmental review process for projects receiving funding from the State Revolving Fund.

Update on the ARRA of 2009

On February 17, 2009, President Obama signed the American Recovery and Reinvestment Act of 2009. The Recovery Act seeks, in part, to stimulate the Nation's economy by investing in environmental protection and water infrastructure projects.

The Recovery Act allocates $4 billion to help communities with water quality and wastewater infrastructure needs and $2 billion for drinking water infrastructure needs. For Kentucky, the Recovery Act allocated approximately $50 million in Clean Water State Revolving Funds (CWSRF) and approximately $21 million in Drinking Water State Revolving Funds (DWSRF).

The Act included several provisions including:

- Use at least 50% of the allocations to provide additional subsidy to eligible recipients in the form of grants, principle forgiveness, or negative interest loans.
- Commit 20% of the allocations for projects that promote "green infrastructure", water or energy efficiency improvements or other environmentally innovative activities.
- All projects must be under construction contract no later than February 16, 2010.

Planning for the ARRA began midway through the 2009 SFY and has involved many web conferences, teleconferences, and the release of numerous guidance documents. In February, the DOW and Kentucky Infrastructure Authority (KIA) conducted a "Call for Projects" and developed a project priority list. Shortly after the list was released in April, DOW staff worked with KIA to organize a two-day ARRA Conference, designed to provide guidance and assistance to ARRA reciepients to meet funding prerequisite requirements and to have their projects under construction contract prior to Feb. 16, 2010. DOW staff has worked diligently under a compressed schedule to process and review ARRA projects as expeditiously as possible. Out of 43 clean water and 17 drinking water Recovery Act projects, Kentucky had six projects begin construction as of August 30, 2009.

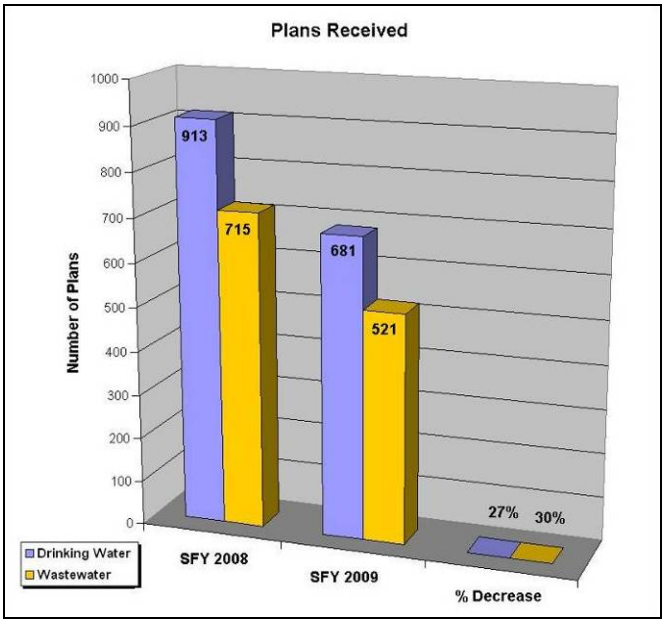
One particular project receiving Recovery Act funding is the Kentucky Horse Park's Manure Bioenergy Management project.

The Kentucky Horse Park generates a large amount of waste while maintaining tourist and equine competition activities. A major portion of the waste comes from cleaning out stalls and removing the muck that the horses generate. The current solution for disposal of this waste is hauling the muck to a landfill. The Manure Bioenergy Management facility proposed will provide an on-site solution for the disposal of horse generated muck. The productive reuse of horse muck to generate electricity is expected to substantially offset electric charges incurred at this time. The conversion of waste to energy at the park will advance the reuse of waste material technology across the Commonwealth. This system is an environmentally friendly energy alternative. The green component of the project would use bioenergy by burning all by-products, such as straw bedding and manure to produce clean energy. Emissions will be far below the limit values, and the ash left over can be used as fertilizer. The total project cost is $1,950,000. The Horse Park is receiving $950,000 from the Recovery Act funds and $1,000,000 from the base CWSRF program.

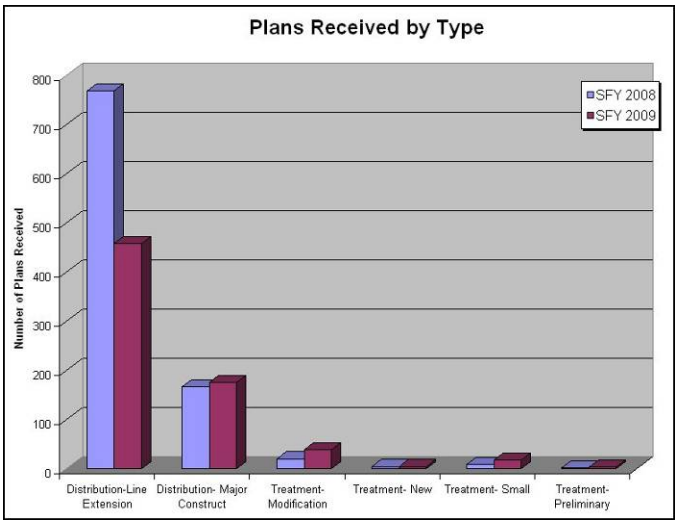
Engineering Section

The Engineering Section managed to close the year with no construction permit backlog. In general, drinking water and wastewater engineering plans were reviewed and approved within the regulatory time frame. The number of plans received during SFY-2009 was significantly lower than SFY-2008; this is directly attributed to the current recession. When the economy slows, development slows or stops completely and there isn't a need for new facilities. High fuel prices also drove up the cost of construction materials, such as PVC pipe, which discouraged new construction. The stimulus package released in February has helped to increase the pace at which new projects are currently being submitted as cities take advantage of the federal subsidies to come into compliance with agreed orders and fix outstanding issues with their systems.

The number of drinking water treatment plans received in 2009 almost doubled from 2008 levels. This sharp increase can be attributed to several public water systems needing additional capacity to meet their water needs as well as the efforts to comply with recently promulgated drinking water rules.



The Engineering Section is continuing to explore opportunities to reduce the workload by partnering with municipalities and water and sewer providers with technical capacity to help us perform engineering plan reviews for small projects. This is an area that we hope to explore thoroughly next year.



The Engineering Section is committed to cross-train all of their engineers to master the review process of both drinking water and wastewater projects. Several training sessions were held throughout the year and several more are planned for next year. These cross-training efforts proved very useful in the summer of 2009 when the section had to work shorthanded, as four reviewers were on long vacations simultaneously. The rest of the section pulled together and managed to process all the projects within the regulatory time frame.

State Revolving Funds (SRF) and Special Appropriation Projects (SPAP) Section

The SRF and SPAP section is currently administering more than 160 active SRF and Special Appropriation Projects (SPAP). Most of these projects are under construction, so the section activities are mostly limited to processing change orders, reviewing pay requests, and conducting field inspections. In addition to the above numbers, the ARRA added another 63 projects that we will jointly administer with KIA.

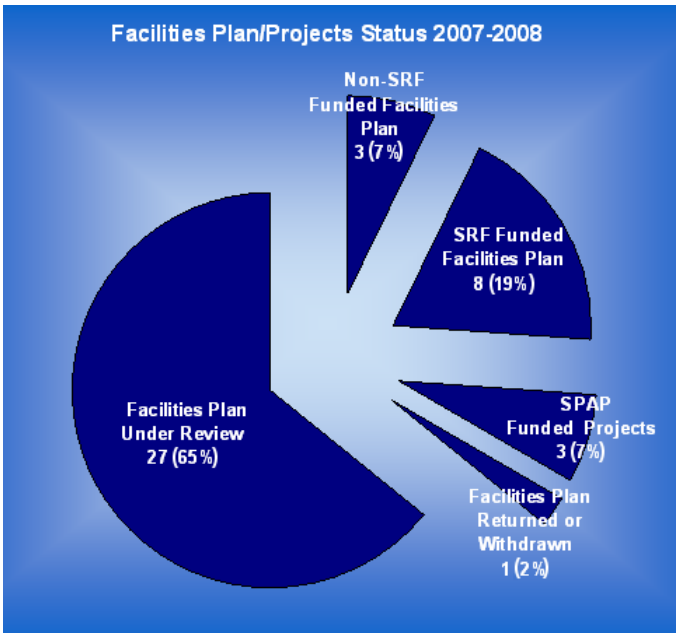
Demand for SRF low interest loans was robust in 2009 as KIA Board approved 28, totaling $136 million, for projects designed to improve water quality and protect public health. The continuing challenges in the credit market, the demand for the CWSRF money from the 17 communities with combined sewer overflows, and needed upgrades at public water systems to demonstrate compliance with recently promulgated drinking water rules are likely to extend the solid demand for the SRF money well into next year.

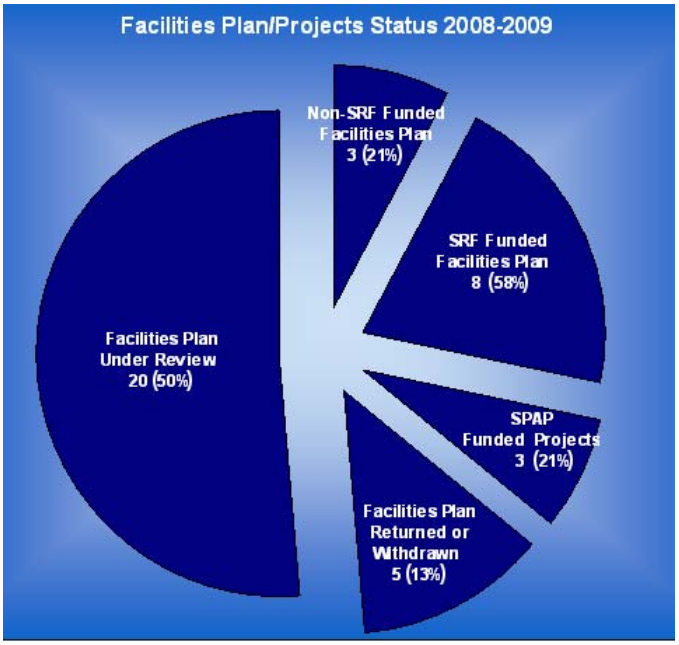
On the special appropriation grants side, Congress again appropriated $5 million to four clean water and two drinking water projects. In FY-2008, Congress appropriated the same amount for five clean water and 2 drinking water projects. DOW receives 3% of each grant for administering these projects on behalf of the U.S. EPA and has agreed to perform the following activities: approve the construction plans and specifications, prepare environmental assessments, evaluate change orders, process pay requests, and conduct construction inspections. During FY-2008 DOW made preliminary analysis of the time and cost of managing SPAP projects. The analysis revealed that for some projects the 3% set-aside was not enough to cover DOW's project management cost. So in FY 2009 DOW successfully renegotiated with EPA the terms of the 3% work plans. Per the terms of the new work plans DOW retained the 3% set-aside and EPA took back the environmental review process; a task that had taken an entire year to complete. This change resulted in six fewer environmental reviews per year.

Wastewater Municipal Planning Section

The Wastewater Municipal Planning (WMP) Section reviewed and approved 11 facility plans and prepared environmental assessments for three projects receiving special appropriation grants. Over

the past year the overall number of pending facility plans dropped.



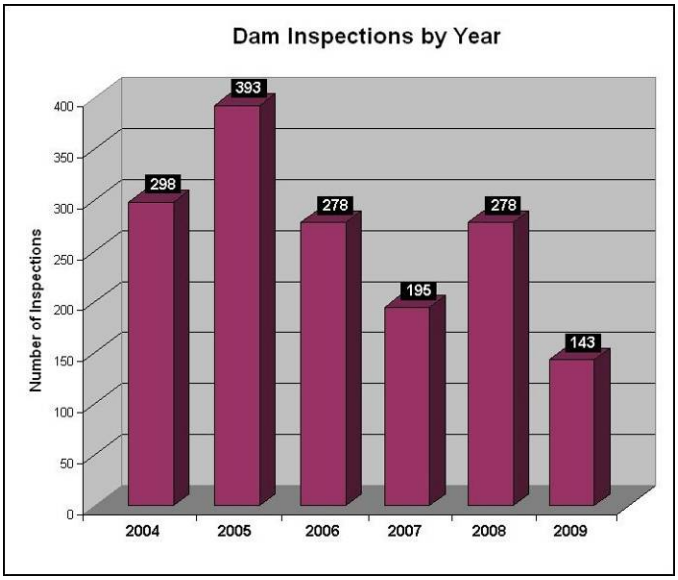


The section is currently engaged in revising the division's wastewater planning regulation to require Regional Wastewater Planning Agencies to consider the no-discharge alternative including recycle and reuse in their facility plans. The regulation revision will also enhance the facility plans' public participation process by posting the public notice for public meetings on the division website, thereby making it available to a much larger audience.

The WMP section is also pursuing cross-training opportunities with other sections within the branch to develop some additional reviewers, who will help manage the workload of the facility plan reviews.

Dam Safety and Floodplain Compliance Section

The Dam Safety and Floodplain Compliance Section completed 278 dam inspections in calendar year 2008, a 42% increase over calendar year 2007. This outstanding performance is attributed to staff having more time available to inspect dams. Staff did not have to assist the Floodplain Management Section with issuing stream crossing construction permits.



The section continues to tackle a significant backlog of floodplain compliance cases. Even though the

section managed to cut the backlog by half from 300 cases to just fewer than 140 cases, there is more work needed to eliminate the entire backlog and prevent its recurrence. This is a challenge the section will address over the next year.

Capacity Development Section

Sustainable Infrastructure Workgroup

In August of 2008 the DOW started a Sustainable Infrastructure (SI) Workgroup. This involved several representatives from different areas of the DOW with the entire Capacity Development Section in attendance. The workgroup discussions involve how to make both the regulated, private, and public sectors work towards improving and maintaining their infrastructure. From August to December of 2008 the Sustainable Infrastructure group met six times, generally getting up to speed on EPA's SI Program and planning some basic stakeholder outreach.

Among outreach activities of the workgroup members, the Capacity Development Section (CDS) promotes Sustainable Infrastructure every time a Sanitary Survey of a water system is performed and during every presentation given regarding on the Capacity Development Program. Materials are provided detailing Sustainable Infrastructure concepts, and referencing EPA and other web links for more information. One workgroup member took advantage of an opportunity to provide training to attendees of the Kentucky League of Cities annual meeting, reaching 24 officials. Additionally, several articles were published in the Streamlines newsletter detailing EPA's Infrastructure Gap Analysis Report and tenets (two of EPA's four pillars) of SI.

In early 2009, the Sustainable Infrastructure Workgroup temporarily suspended their meetings due to the resource demands posed by the American Recovery and Reinvestment Act. Regular meetings will resume once the ARRA workload has attenuated.

Capacity Development Strategy

Kentucky's Drinking Water Capacity Development Strategy was accepted by EPA as submitted, along with the Program Implementation Report. EPA's letter of acceptance included the following note:

> *"Revisions to the Strategy appear to present a sound, well-thought-out approach to improving the capacity of water systems in Kentucky. The revised Strategy is responsive to each of the five key elements identified … in the Safe Drinking Water Act and it is apparent that the revisions resulted from a robust stakeholder and public involvement process"*

Capacity Development Regulation Draft

During the past year the Capacity Development Section began drafting regulations for Kentucky's Capacity Development Program. During this effort CDS has further defined its role and streamlined its activities. We have taken a hard look at our existing practices and plans for implementation of the Capacity Development Strategy to prioritize our activities based on the requirements of the Safe Drinking Water Act. In doing this we have significantly revised an initial draft of the proposed regulations to include clarification of requirements for both new and existing water systems, the types of deficiencies that will be critical, and instructions for systems placed in a tiered approach for corrective action. Many of the individual components of the CDS program are supported by existing Kentucky statutes or regulations. CDS personnel are researching these requirements to

SUCCESS STORY:
CENTERTOWN WATER SYSTEM

Centertown Water System (CWS) is a purchase-only system that has historically been unable to provide consistent water service to all customers during high demand months. Typically, residents in certain parts of the service area would be without water for multiple days at least once during the year. CWS was put on sanctions (full line extension and tap-on ban) on July 30, 2007. The service interruptions were caused by insufficient water pressure due to inadequate and deteriorated infrastructure. Of particular concern was the four-inch transmission main from Hartford Municipal Water Works and an improperly located and undersized storage tank.

CWS had plans for an improvement project, and applied for a DWSRF loan, but were unable to rank high enough on the 2006 priority list to receive funding. With sanctions and subsequent adoption of an Agreed Order (AO) coordinated through CDS, the CWS improvement project ranked high enough on the 2008 DWSRF priority list; a Binding Commitment Letter was issued by Kentucky Infrastructure Authority on March 24, 2008.

In the original proposal, the system was not going to be able to afford the entire improvement project as planned. CWS received additional funds this year (DWSRF plus ARRA funds) that will allow them to complete their improvement project in full.

This is a success story since CDS staff helped enable CWS to receive necessary funding: (1) the extra points from having a signed AO helped move CWS to a fundable rank on the 2008 priority list and (2) this exemplifies the improved / streamlined coordination between CDS and the DWSRF loan program to target systems in need.

ensure that our regulations will be in line and compliment these existing requirements. In addition, CDS is making sure that its actions will be truly effective by evaluating past experiences and researching Capacity Development programs in other surrounding states. Finally, CDS personnel have been working with the DOW's regulation coordinator to complete the Regulatory Impact Analysis and Tiering Statement.

EPA Groundwater Rule

In December 2009 the State will begin conducting Sanitary Surveys on groundwater systems, per the EPA Groundwater Rule requirements. The inspections will be similar to those currently performed at surface water systems; however, this will be the first time any groundwater systems in Kentucky have had such an in-depth inspection performed. There are currently 156 groundwater systems in the state, with the majority in the Paducah Regional Office area. For the federal fiscal year 2009-2010 the Capacity Development Section and the Compliance and Technical Assistance Branch will perform 32 sanitary surveys of groundwater systems serving populations of 100 or less, in addition to the 116 surface water and related purchasing systems already scheduled for sanitary surveys during the same time period.

Public Education

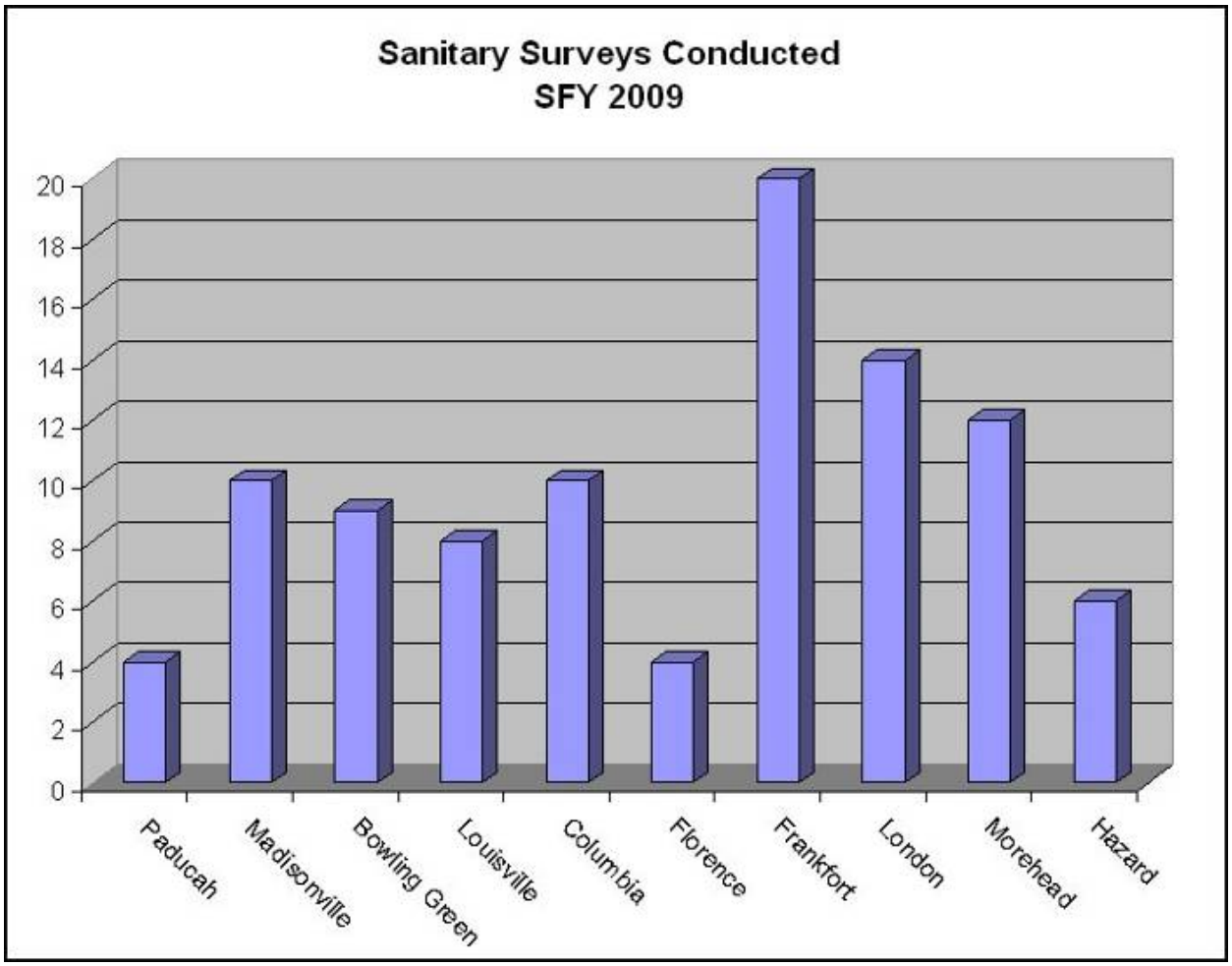
As CDS staff have improved and expanded their skills over the past year, we have been providing increased assistance to water system staff. Through the CDS portion of the sanitary survey inspection, systems are evaluated for effective management and operation. During these inspections CDS program managers identify areas for improvement and provide information concerning asset management, free asset management software, information for decision makers in water systems, and information

about the Kentucky Water and Wastewater Agency Response Network. After one inspection, CDS provided further assistance with developing operations and maintenance manuals and cross-connection control programs, for example. In some cases, CDS has helped water systems to develop these manuals and formal programs where considerably inadequate procedures or no procedures existed before.

Ninety-one Sanitary Surveys were conducted during SFY 2009.

Better Management of Sanitary Survey Data

Currently these documents are archived, along with information contained within them, in TEMPO. There is no mechanism for TEMPO to extract data and information from these forms. In the coming fiscal year the CDS Supervisor and Environmental Scientist will work with representatives from the GIS and Data Analysis and IT Support Sections to (1) determine what information would be useful to extract (2) determine a method to extract the information and (3) build a database appropriate for housing the information and performing analyses.

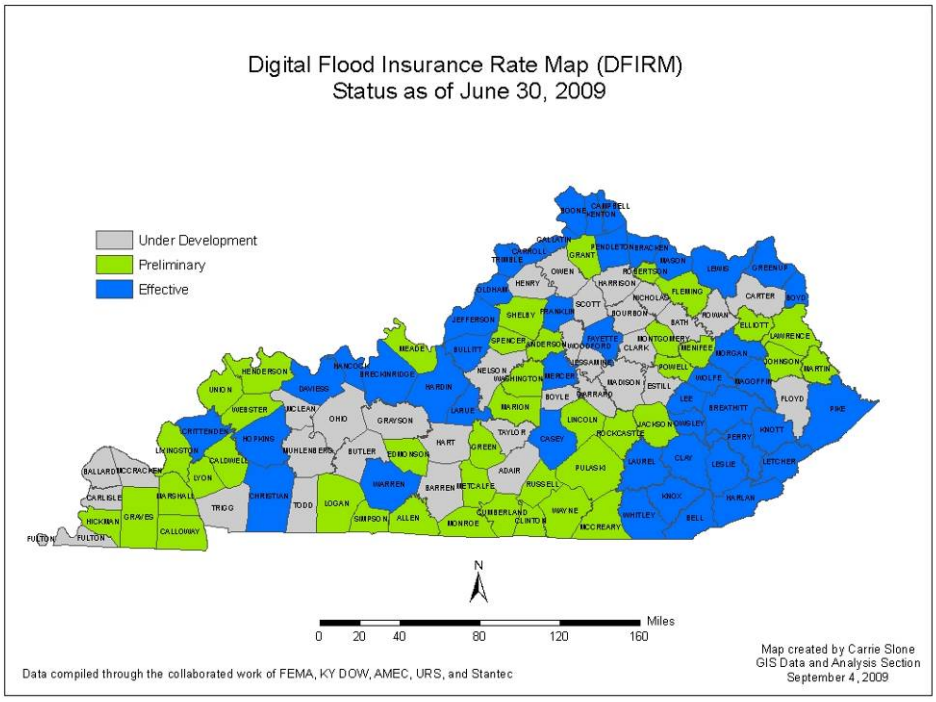


The Watershed Management Branch (WMB) coordinates the implementation of the watershed framework and watershed basin planning, implements groundwater management programs, administers the water withdrawal permitting program and coordinates the development of GIS and quality assurance resources to meet the needs of the Division. Each section within the branch (**Groundwater, GIS and Data Analysis Section, Nonpoint Source and Basin Team Section and Water Quantity Management Section**) brings a diverse collection of DOW initiatives and outreach, both inside DOW and with the public. Branch tasks require integrated knowledge of water systems, ecosystems and public policy.

Map Modernization Program

DOW has partnered with the Federal Emergency Management Agency (FEMA) in order to update the state's inventory of flood hazard maps. Map Modernization was a multi-year congressionally mandated initiative to create digital flood hazard maps statewide. Building on the success of the Map Modernization initiative, DOW has continued its partnership with FEMA into the second phase of hazard identification, referred to as RiskMAP.

This initiative will combine natural hazards identification (Mapping) with the Assessment of the cumulative effects of natural hazards, and Planning on how best to mitigate those hazards through mitigation plans devised by local governments. The Map Modernization and RiskMAP initiatives bring together federal, state and local stakeholders in order to produce accurate and usable hazard maps, while providing a mechanism to prevent future losses. All map-related products will be available in a GIS format.



DOW began actively managing the Map Modernization initiative in 2005. In doing so, DOW has been involved in updating flood hazard maps in 96 Kentucky counties. The goal of the program is to identify flood hazards for streams with up to a 1 square mile (1 mi2) drainage area, which coincides with the state floodplain permitting requirements outlined in KRS 151. By managing the flood hazard map updates at the state level, DOW has been able to increase stakeholder involvement, identify leverage data in many counties and provide outreach to local governments and citizens statewide.

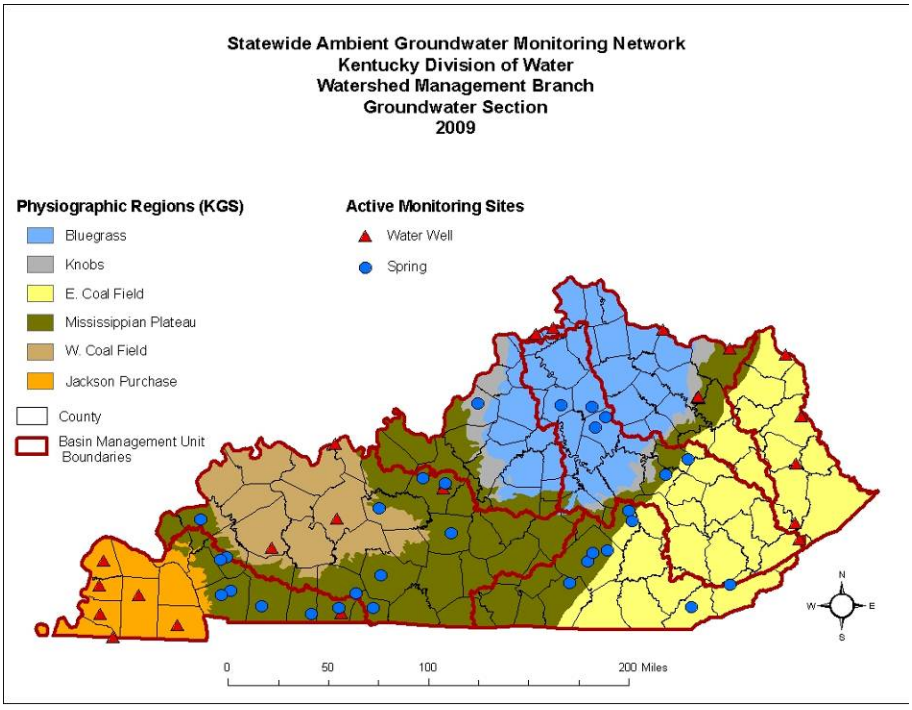
Through the Cooperating Technical Partners (CTP) program with FEMA, DOW received approximately $3.9 million in federal fiscal year 2008 to update flood hazard maps in 34 counties. For federal FY 2009, DOW received approximately $5.3 million to further revise the flood hazard maps in 15 counties that had previously been mapped through the Map Modernization initiative. DOW has continued building partnerships in order to plan for and create a vision of the RiskMAP initiative and to refine the flood hazard mapping process while integrating it into an all-hazards approach.

Groundwater Section

The Groundwater Section functions within WMB to provide a more holistic approach to watershed management of surface water and groundwater resources. The section's mandate is to manage and protect the groundwater of the Commonwealth and this task is administered through a variety of programs, such as the ambient groundwater monitoring network, the certified well drillers program, groundwater protection plans and technical assistance to citizens, industry, and to local, state and federal agencies.

Groundwater Monitoring

The purpose of monitoring groundwater is to characterize baseline geochemistry and ambient groundwater quality conditions throughout the state.



Samples are collected and analyzed for basic water chemistry, major inorganic ions, metals, nutrients, pesticides and volatile organic compounds. Active ambient groundwater monitoring sites are displayed in the map below. To date, the division has collected and analyzed approximately 5600 samples from over 1600 groundwater sources across Kentucky as its contribution to the statewide groundwater monitoring network. Oversight for this network is through the Interagency Technical Advisory Committee (ITAC) on Groundwater, which includes DOW.

Programs and Duties

Ambient Groundwater Monitoring Program

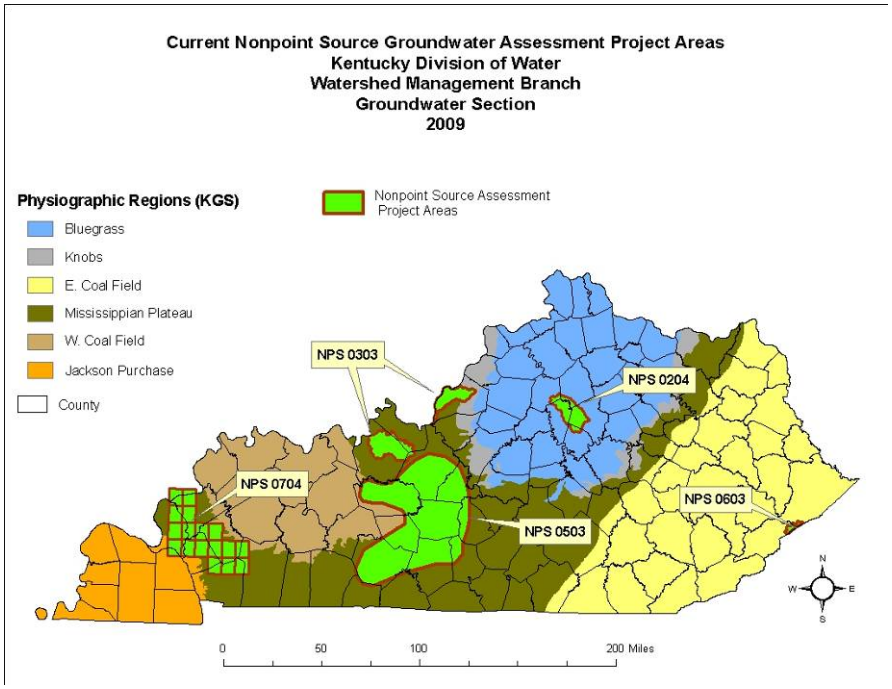
Regularly scheduled sampling continued for the Statewide Ambient Groundwater Monitoring Network. This fiscal year there were 123 samples collected from 55 sites (wells and springs) across the state. Groundwater quality data were provided to numerous individuals through information requests. Data were also included in statistical analyses for regional and watershed-based groundwater assessments.

Complaint Sampling

DOW responds to groundwater complaints and conducts investigations as requested by the general public. In this fiscal year the division collected samples from 24 sites for complaint investigation. The majority of these samples are collected by personnel from our regional offices.

Nonpoint Source (NPS) Groundwater Assessments

As part of statewide efforts to characterize ambient groundwater and NPS impacts, the division conducts assessments using federal Clean Water Act §319(h) Nonpoint Source pollution grant funds. These assessment projects focus on watersheds that have confirmed degradation or are lacking assessment. Data collected include groundwater chemistry, biological data and tracer data for karst aquifer mapping.



Initial assessments were conducted in each of Kentucky's major river basins. These projects used a broad focus, studying all the various groundwater flow regimes present in each watershed. Later studies have a narrowed focus, looking at sub-watersheds that were identified as problematic or were omitted from previous studies. The Groundwater Section currently has five active NPS projects in various phases, from study area reconnaissance and site selection to drafting final reports.

Groundwater Quality Assessment in South Elkhorn Creek Watershed (NPS0204)

Numerous segments of South Elkhorn Creek are on the 303(d) list of impaired waters. The goal of this project was to assess groundwater quality and its impacts on surface water. This project is nearing completion and a draft report has been developed.

Groundwater quality sample results indicate definite NPS impacts to groundwater from E. coli, pesticides, total suspended solids (TSS), nitrate (as N), orthophosphate (as P) and total phosphorus. Potential NPS impacts were noted for chloride. There seems to be little or no correlation between land-use types (agricultural vs. urban/residential) and overall groundwater quality.

For this study twelve tracer tests were recovered, which allowed for the delineation of two additional karst groundwater basins and verification of other previously unknown hydrogeologic connections. These data in combination with previous tracer data were used to assess USGS Hydrologic Unit Code (HUC) delineations for surface watersheds. Karst groundwater basin deviations from topographic watershed divides have serious implications for hydrologic modeling, TMDL development and emergency responders.

Groundwater Quality Assessment in Sinking Creek and Beargrass Creek Watersheds (NPS0303)

Sinking Creek and Beargrass Creek also had significant impaired reaches as reported on the 303(d) list of impaired waters. This study was designed to address groundwater quality and its impacts on surface water. Groundwater quality monitoring and tracer tests have been completed and data is currently being analyzed. Aspects of this project relating to groundwater infiltration of the sanitary sewer system in the Beargrass Creek Watershed, Jefferson County provided Louisville/Jefferson County Metropolitan Sewer District with useful information with regards to their CSO consent order, and introduced new dye tracing systematics for assisting with similar issues elsewhere.

Integrated Surface Water and Groundwater Assessment of Large Springs in the Green River Basin (NPS0503)

Surface water assessments cannot adequately characterize water quality in karst regions of Kentucky due to a relative lack of flowing surface streams. This project addresses that inadequacy by using an integrated approach to assess groundwater resources, according to surface water protocols, in an attempt to better define the nexus between the groundwater and surface water systems. Ten large springs in the Mississippian Plateau region were monitored for one year. The project report is being written. Groundwater quality monitoring and tracer tests have been completed. Data obtained were sufficient to assess these springs and to have them listed on the 2008 Integrated Report – 305(b)/303(d).

Of the ten springs assessed in the Green River basin, nine springs were "Not Supporting" for

Primary Contact Recreation (PCR), and one spring was "Partially Supporting" for PCR. Five of these springs were "Fully Supporting" for Aquatic Life Use; the other five springs were "Partially Supporting" for this designation.

The final report for this project will include discussions of each spring assessed relative to the Primary Contact Recreation and Aquatic Life Use standards set forth in Kentucky Administrative Regulations 401 KAR 10:031. The report will also include findings for biological population assessments, and tracer tests conducted to delineate and refine these identified karst groundwater basins. The division anticipates submitting the final report in October 2009.

BMU5 Elkhorn Creek Sub-basin Groundwater Study (NPS0603)

This project is focused on assessing groundwater quality of domestic-use wells along Elkhorn Creek in southeastern Pike County and northeastern Letcher County. All chemical water quality samples have been collected and analyzed. Each well used in this study will be sampled for Total Coliform and E. Coli. Biological Activity Reaction Tests (BARTs) will also be collected for each well including Iron Related Bacteria (IRB), Sulfate-Reducing Bacteria (SRB) and Slime Forming Bacteria (SLYM). Preliminary work on the draft report is currently in progress.

West Pennyrile Karst Study (NPS0704)

This project is designed to use the same integrated approach as NPS0503, with a goal of assessing large springs according to surface water protocols. Work on this project began in late fall of 2008. The division is currently conducting field reconnaissance and a hydrogeologic inventory in preparation of tracer tests throughout the study area. Following completion of the tracer tests and delineation of several karst groundwater basins, monitoring sites will be chosen.

Groundwater Protection Plan (GPP) Program

The GPP program was established in regulation in 1994, the final product of a consensus rule making process facilitated by the division to develop a comprehensive groundwater protection program for Kentucky. Since the spring of 2008, renewed efforts have been made to educate the public about this program. To this end the division has refocused its attention on providing GPP training through presentations and forums within various state government agencies, especially those that have direct contact with the public, to raise awareness of this program.

Certified Well Driller's Program

The Certified Driller's Program is responsible for the certification of Kentucky's water well and monitoring well drillers and monitoring compliance of well installation practices. Regulations for Well Driller certification and well construction practices and standards were revised and filed with the Legislative Research Commission and became effective in November, 2008. This regulation package included a revision of the certification regulation, updates to water supply wells construction standards and a separate regulation for monitoring well construction practices. Additionally, these regulations are supported by a more comprehensive definitions regulation that reflects professional and technical changes within the profession. The new regulations can be viewed through our website: http://www.water.ky.gov/gw/gwtech/gwdrill/. In addition, the program has initiated a new procedure for addressing driller's complaints by involving the

Kentucky Water Well Certification Board in the review process.

The program has also taken the lead in developing guidelines for promulgation of laws and regulations to address geothermal drilling installations, an apprentice program for certified well drillers in training, and the development of a stand-alone comprehensive test for monitoring well certifications. The program held its annual continuing education training in Louisville in March, and will continue with its annual recertification efforts through August 31, 2009. The division anticipates recertification of approximately 143 drillers, and additional new applications due to the abolishment of the rig operator certification.

Special Projects

All members of the Groundwater Section respond to requests for technical assistance relative to groundwater resources throughout Kentucky. These requests originate from the general public, public water suppliers utilizing groundwater, and other government agencies. Some of these issues can be resolved over the telephone while others require site visits and full-scale investigations. The Groundwater Section receives approximately 2,000 requests for technical assistance each year.

The section conducted 20 dye traces for karst mapping projects and groundwater technical assistance. We also assisted 9 county health departments with dye traces relative to localized contaminant investigations.

Personnel from the Groundwater Section assisted the Division of Mining Reclamation and Enforcement (DMRE) with a dye trace study to determine potential groundwater impacts of a proposed quarry in Todd County near Cooksey Spring. Based on the results of the tracer test DMRE has required the quarry owners to conduct further subsurface investigation to provide proof that quarry operations will not adversely impact groundwater within the area. The Groundwater Section also assisted DMRE with an assessment of potential groundwater impacts in the vicinity of a proposed fluorite mine in Livingston County. Based on local geology, hydrology and mine specifications it was determined that groundwater resources will not be threatened.

Water Quantity Management Section

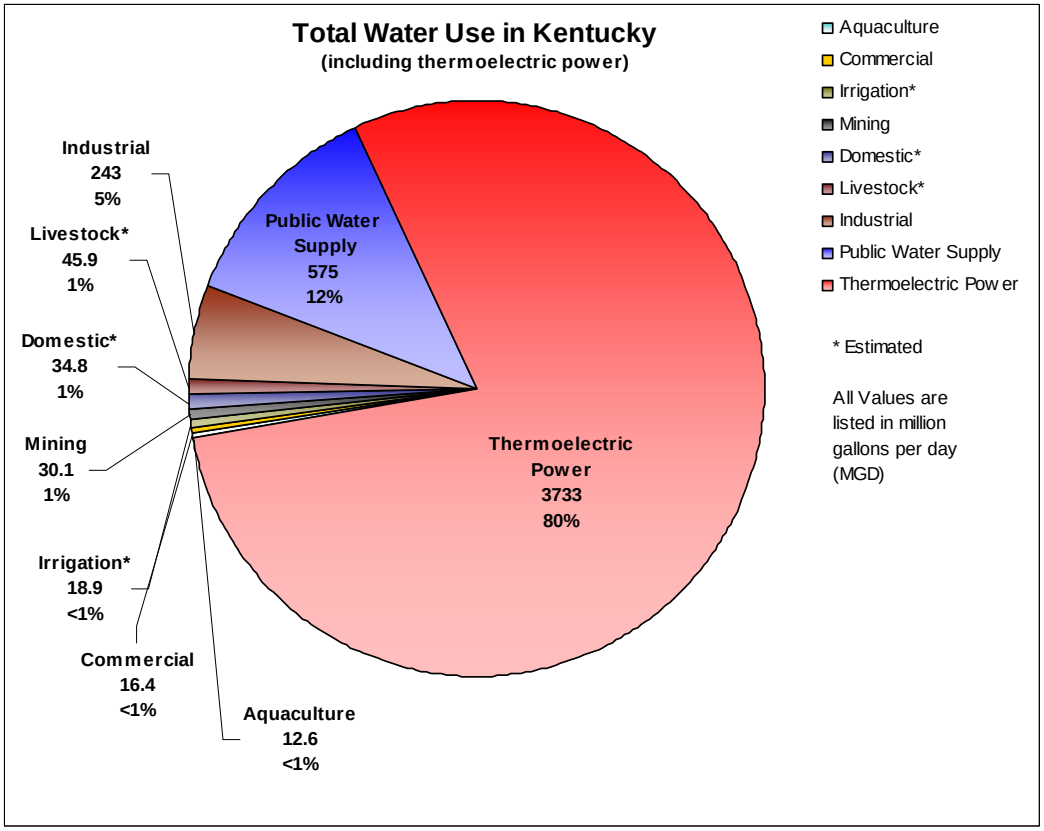
Water Withdrawal Permitting Program

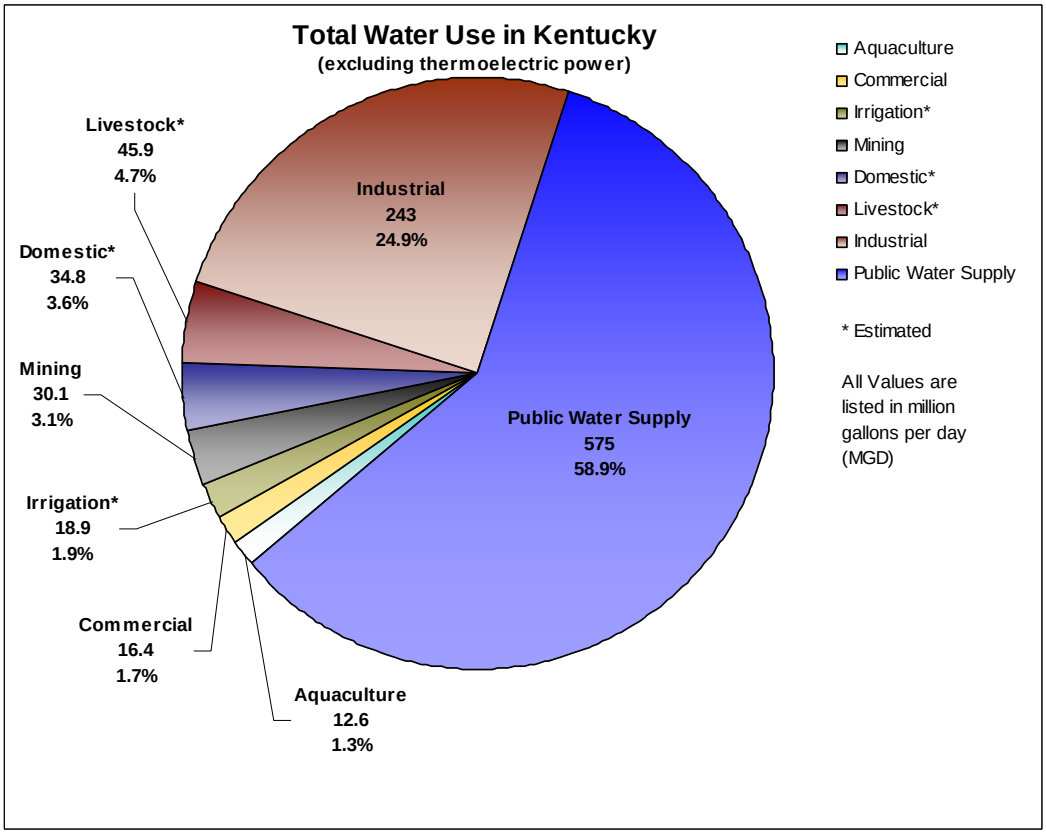
The Water Withdrawal Permitting program oversees all withdrawals in the state that average at least 10,000 gallons per day, with the exception of water required for domestic and agricultural purposes and for steam-powered electricity generating plants. There are 687 active water withdrawal permits.

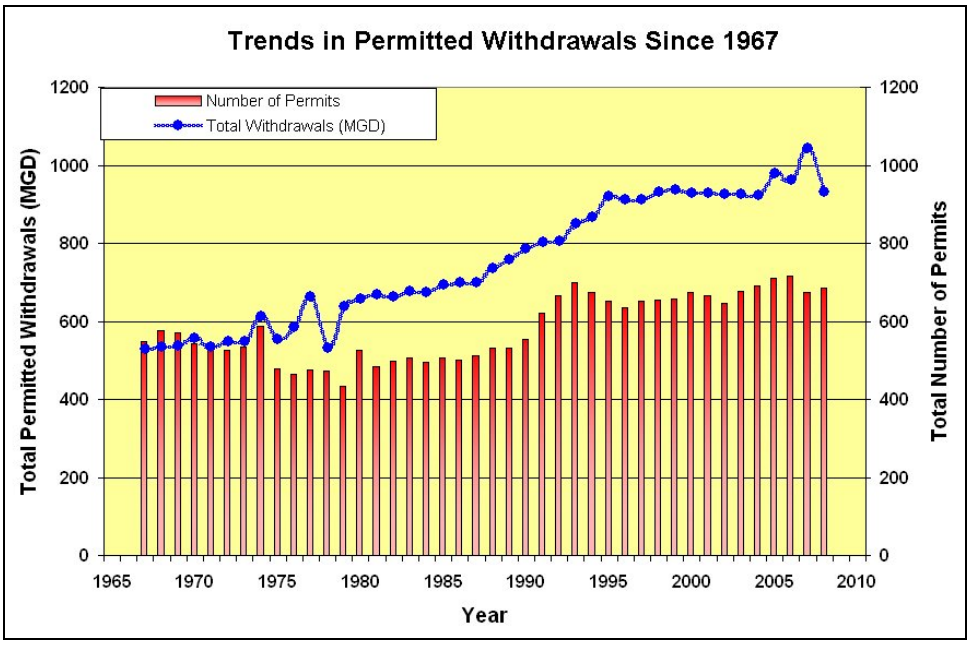
Permit holders are required to keep records of daily water use and report the information to DOW monthly. During 2008, 146 permit holders who had failed to meet this requirement were brought back into compliance.

Water Use

Water used for purposes of generating thermoelectric power accounted for 80 percent of the total water withdrawn in Kentucky for the fiscal period ending June 30, 2009. A majority of the water that is used for power generation is not consumed and is used primarily for cooling purposes and then returned to the source.


Total Water Use in Kentucky
(including thermoelectric power)
Industrial
243
5%
Livestock*
45.9
1%
Domestic*
34.8
1%
Mining
30.1
1%
Irrigation*
18.9
<1%
Commercial
16.4
<1%
Aquaculture
12.6
<1%
Public Water Supply
575
12%
Thermoelectric Power
3733
80%
Aquaculture
Commercial
Irrigation*
Mining
Domestic*
Livestock*
Industrial
Public Water Supply
Thermoelectric Power
* Estimated
All Values are listed in million gallons per day (MGD)


Total Water Use in Kentucky
(excluding thermoelectric power)
Livestock*
45.9
4.7%
Domestic*
34.8
3.6%
Mining
30.1
3.1%
Irrigation*
18.9
1.9%
Commercial
16.4
1.7%
Aquaculture
12.6
1.3%
Industrial
243
24.9%
Public Water Supply
575
58.9%
Aquaculture
Commercial
Irrigation*
Mining
Domestic*
Livestock*
Industrial
Public Water Supply
* Estimated
All Values are listed in million gallons per day (MGD)



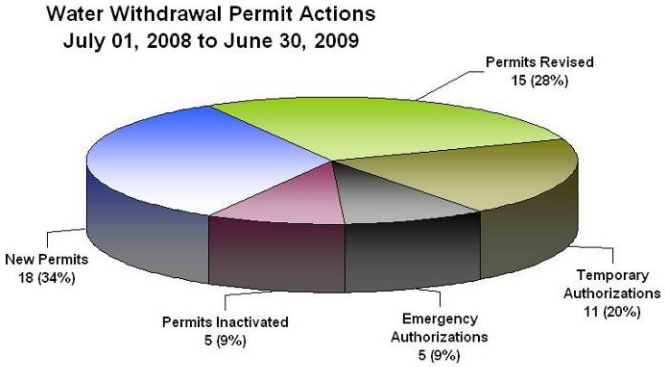
When thermoelectric power generation is excluded, public water supply and industrial water use accounted for 84 percent of the total water withdrawn in Kentucky.

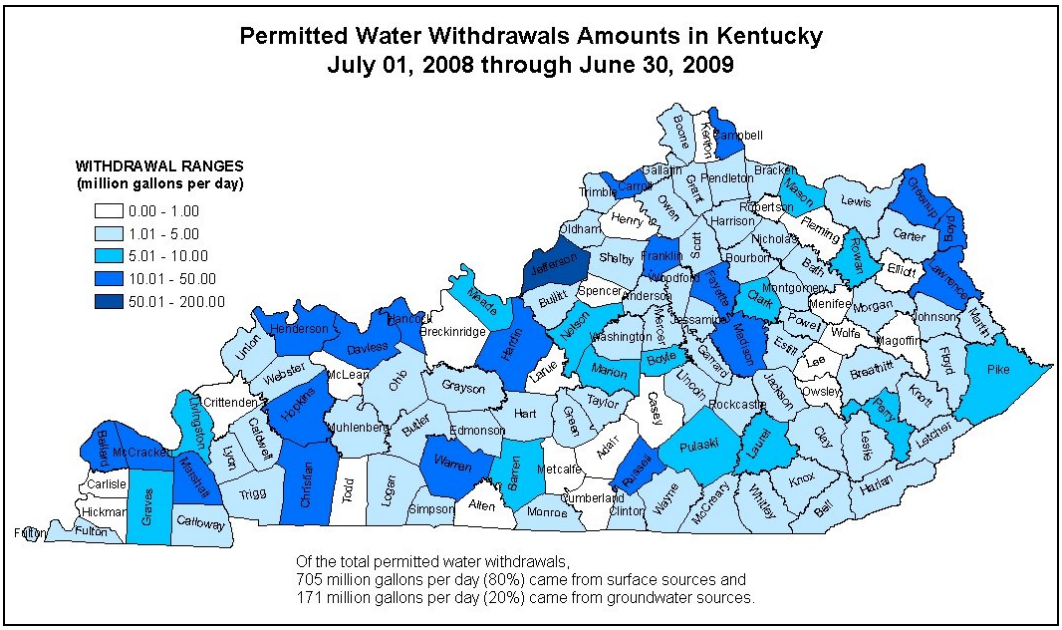
Regulated Water Withdrawals

DOW has regulated water withdrawals since 1967 through a water withdrawal permitting and reporting program. In the 42 years of this regulatory program, the growth in numbers of water withdrawal permits has increased at an average rate of 0.55 percent per year. However, the total amount of permitted water withdrawn has increased at an average annual rate of 1.35 percent per year.

Water withdrawal permitting actions were related primarily to the issuance of new permits and making modifications and revisions to existing permits. Other permitting actions included the issuance of emergency authorizations (short-term authorizations to withdraw due to an emergency) and temporary authorizations (short-term authorizations related to projects that require a limited-duration use of water).

A majority of counties in Kentucky reported average daily withdrawals less than 5.0 million gallons per day for the fiscal period ending June 30, 2009. Counties with average daily withdrawals above 5.0 million gallons per day were generally associated with larger population centers or large industrial water demands. The sources for these large withdrawals are primarily located in the Ohio River and its alluvium or from direct or indirect use of water that is stored and released from U.S. Army Corps of Engineer reservoirs.





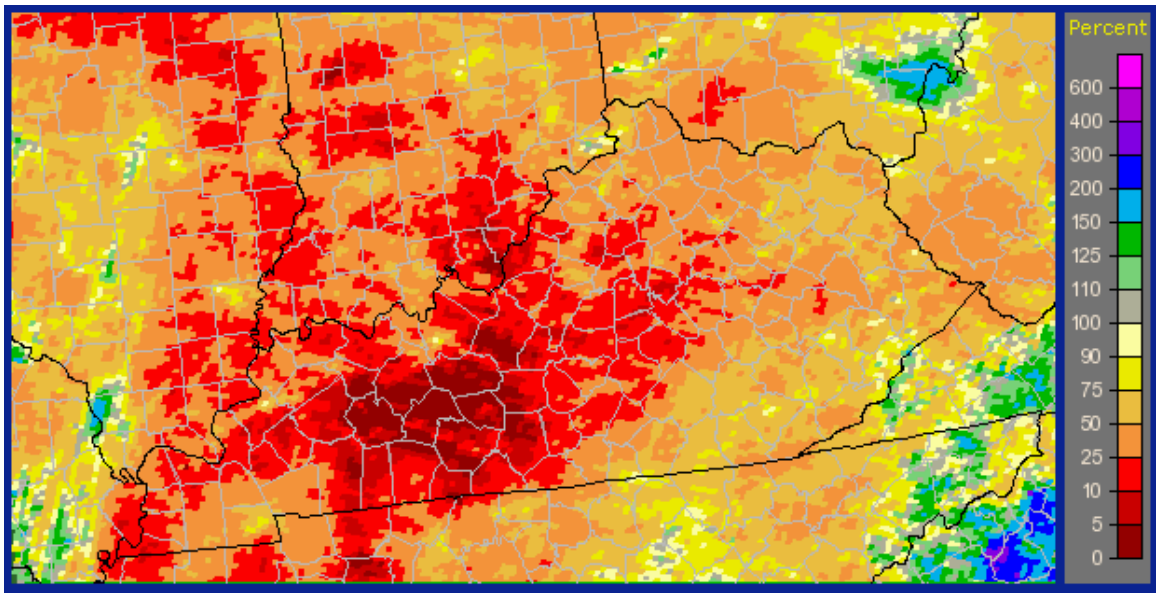
Drought

The drought of 2007 carried forward a large precipitation deficit into 2008. Precipitation amounts during the first 6 months of 2008 were normal to below normal across Kentucky and were not sufficient to eliminate the deficits accumulated during the previous year's drought. By August and September of 2008, precipitation deficits began to accumulate rapidly in the south-central and southeastern portions of Kentucky.

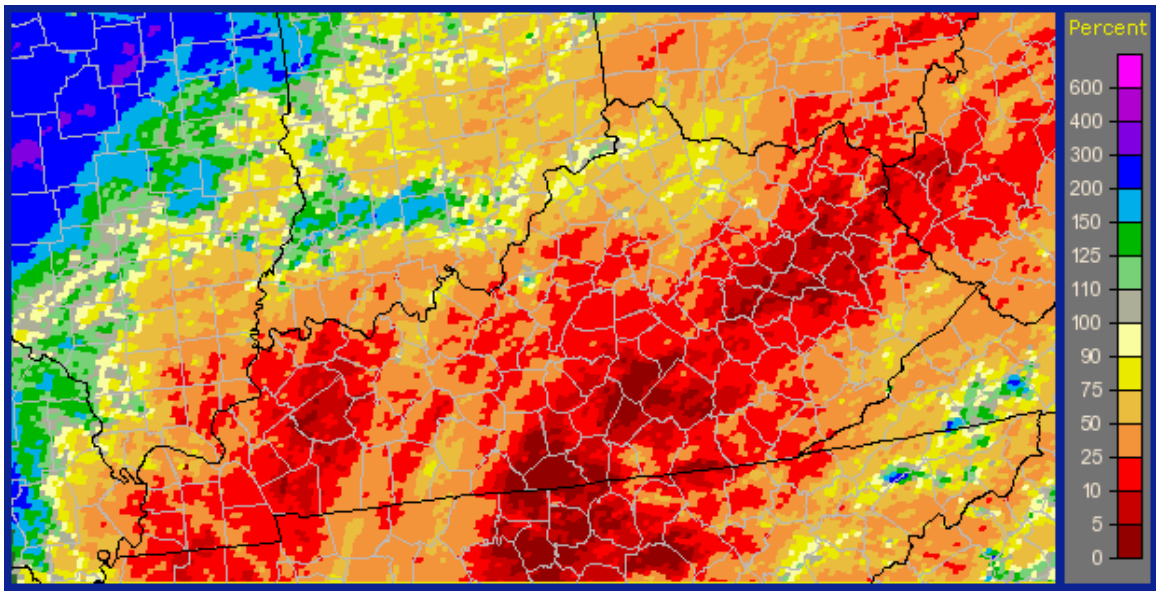
Approximately 35 public water systems reported some degree of water shortage response as a result of the deteriorating conditions of their water supplies or infrastructural issues. Perhaps the greatest of these impacts was observed in Magoffin County where a Governor's Declaration of Emergency was issued in October. Salyersville Municipal Water, the main public water supplier for Magoffin County, faced a severe water shortage as a result of a precipitation deficit in the head waters of the Licking River.

The shortages and subsequent water supply emergency in Magoffin County were the result of a two-year drought event that had severe impacts to the hydrologic conditions in the upper Licking River watershed. Based on historical climate and hydrologic records, the 2007-2008 drought in Magoffin County ranks as one of the five (5) most severe droughts of the instrumental record. Furthermore, measured flows in the Licking River at Salyersville and Red River in Wolfe County suggest that this two-year drought was the most severe two-year hydrologic drought on record in the area comprising the upper Licking River and upper Red River basins.

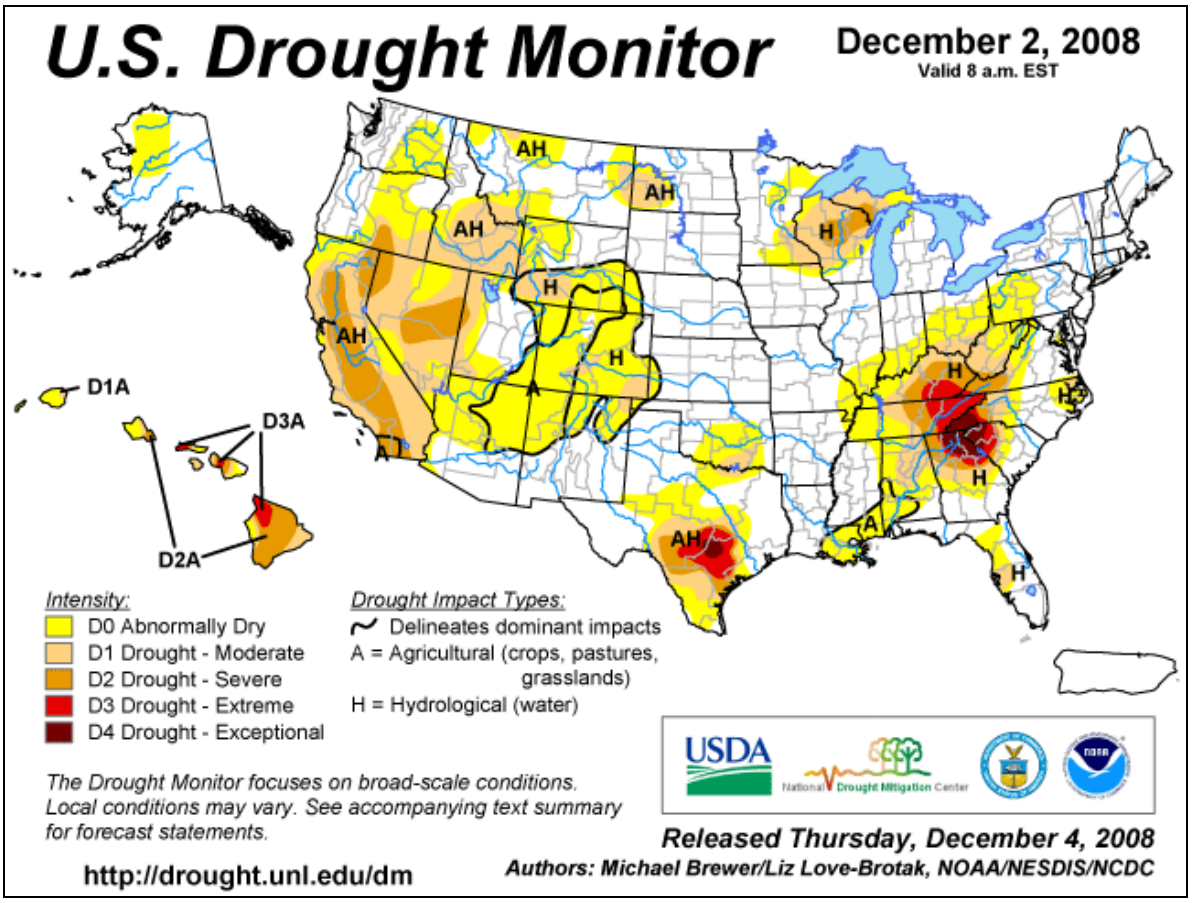
By the end of 2008, drought conditions had peaked as seen in the U.S. Drought Monitor, an index that is used to assess the severity and extent of drought conditions in the United States. With the exception of a relatively dry month in March 2009, above normal precipitation for 2009 has helped to alleviate lingering impacts from the preceding two years of drought.



August 2008 Percent of Normal Precipitation – National Weather Service's Advanced Hydrologic Prediction Service (http://water.weather.gov/)



September 2008 Percent of Normal Precipitation – National Weather Service's Advanced Hydrologic Prediction Service (http://water.weather.gov/)



Wellhead Protection Program

Wellhead protection is the prevention of groundwater contamination through management of potential contaminant sources within the delineated recharge area of a water supply well or spring. Kentucky's Wellhead Protection Program (WHPP) was approved by EPA in 1993 and is coordinated by DOW under the Water Supply Planning Regulation KAR 401 4:220. There are currently 169 active public water systems using groundwater as a source: 96 community, 34 nontransient / noncommunity, and 39 nontransient/community.

The WHPP incurred a 100% turnover of staff by the end of the calendar year 2008; however the process of filling these vacancies is nearly complete. WHPP continues to update the wellhead protection areas (WHPAs) in the GIS system as new wells are brought on line and old wells are closed. The delineated WHPAs are also being updated to reflect changes in delineation methods. WHPP is also incorporating information from the contaminant source inventories into GIS coverage. WHPP reviews completed during FY 2009:

WHPP Reviews Completed FY 2009			
	Phase I	Phase II	5-Year
Reviewed	3	3	2
Approved	1	5	2
Developed	2	2	2

Additionally, WHPP staff members engaged in the following activities:

- 1 GUDI (Groundwater Under the Direct Influence of surface water) determination
- 9 water withdrawal reviews
- 50 WHPP technical assists
- 22 site visits
- 11 public meetings

GIS and Data Analysis Section

The GIS and Data Analysis Section (GDA) was established within the Watershed Management Branch as a result of the 2008 division reorganization to fulfill part of Tactic 2.5 of the FY 2009 Operational Plan: "Implement new organizational structure to improve efficiencies in collection of water quality data and assessment and analysis of water quality conditions and trends." The intention was to expand the protocols and subroutines developed within the former Groundwater Branch to the watershed level to gain the aforementioned efficiencies in water quality data management and analysis for the whole of a watershed, not merely the groundwater resources, as well as institutionalizing GIS education and use throughout the division.

GIS (Geographic Information Systems)

The DOW GIS workgroup was initially created to develop a clear vision of how DOW should use GIS technology and, subsequently, what and how various data sets should be maintained to support decision-making. This workgroup is now facilitated within GDA. Issues currently being addressed by the workgroup include:

- Use of mile points and geo-referenced location information with DOW data
- Development of GIS 101 training sessions to educate more staff on using GIS
- Ongoing DOW participation in the WRIS Technical Advisory Committee
- Continued updates to the Kentucky Watershed Viewer
- Plotter and scanner equipment needs and sharing
- NHD stewardship for Kentucky
- Development of Digital Submission Standards draft
- QA/QC for several components (such as citing a map or layer file, metadata, etc)
- Promotion of webinar capabilities to involve Regional Office staff with central office on all types of meetings, including *It's GIS Lunch* seminars
- Negotiations with COT regarding upgrade to ArcGIS 9.3

GIS 101 A Grassroots Initiative Success Story

Members of the GIS Workgroup recognized the need for basic GIS training for Division of Water staff, but also recognized there were no training funds available. In classic grassroots fashion, they accepted the challenge of doing it themselves. They designed an effective training course (GIS 101), and trained 32% of current staff at significant savings to the Division. The course included basics such as how to log in to the system, loading GIS layers and how DOW information is organized, designing layouts and printing them, plus more advanced topics such as cartographic standards, projections and manipulation of symbology. A hands-on lab session was also offered immediately after the classroom session.

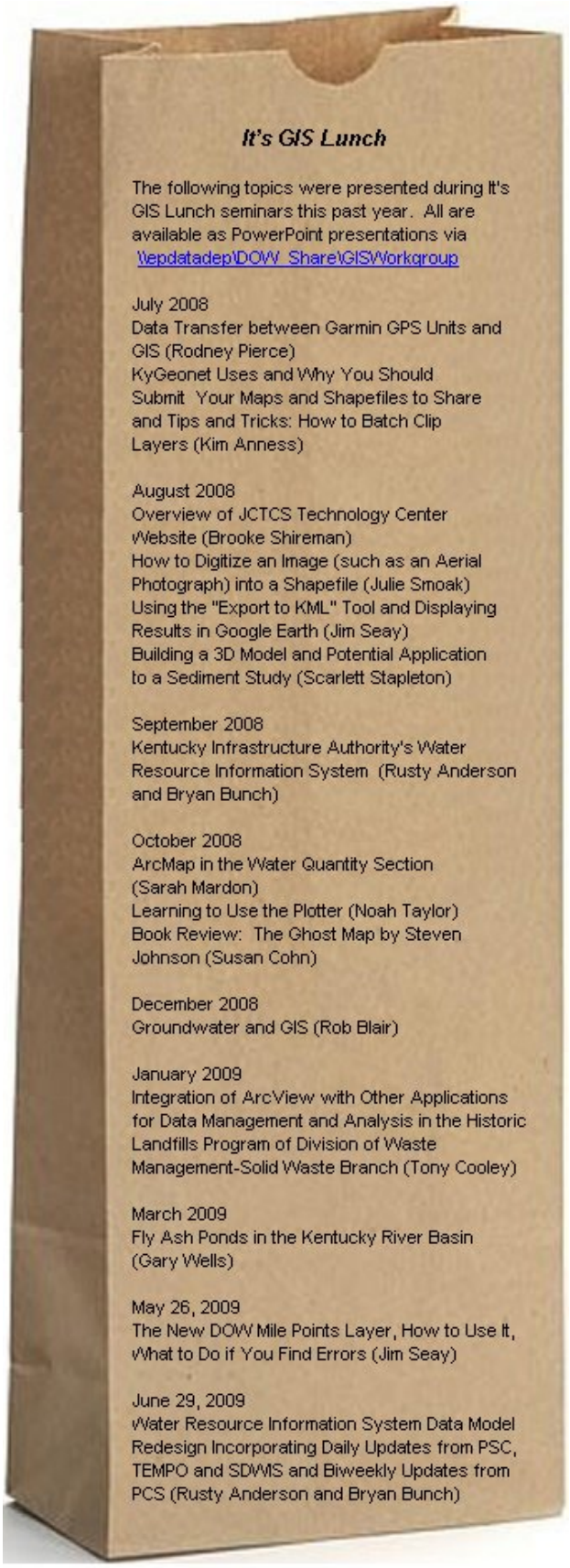
This initiative has been a success and has gained support at all levels. Participation was outstanding with overwhelmingly positive feedback. Training was provided at a significant savings to the Division estimated to be at least $16,000 (67 staff x $250 fee). Additional users in the Division increased recognition of GIS as an analysis tool and the importance of GIS proficiency. GIS 101 will continue to be offered to new hires and other personnel as needed, and the materials developed may be used for independent study.

Appreciation is extended for the hard work of the following members of the GIS workgroup: Susan Cohn (WMB), Julie Smoak (WIB), Jim Seay (WMB), Scarlet Stapleton (WQB) and Noah Taylor (WIB). These DOW employees, along with the entire GIS workgroup, are one of our success stories not only in terms of helping the Division "do more with less," but also serve as an example of inter-branch cooperation to meet the needs of the Division as a whole.

Workgroup members initiated several training opportunities this past year for division staff to learn how to use GIS tools for programmatic use, data/information assessment, and trend analysis. Training was offered as a class (see above), as individual online presentations and as one-on-one training with a GIS point-of-contact (GPOC). "It's GIS Lunch" seminars have also been successful in educating staff regarding capabilities of GIS. These forums provide a way for division users to share information, tips and tricks with other users. As an added bonus, users gain a better understanding of other programs within DOW (see topic listing on next page).

Additionally, GDA staff created several GIS templates for permit writers to utilize in order to make better assessments about a site based on geographic proximity. These templates enabled permit review staff to utilize the functionality of the GIS tools without having to become "experts" in GIS and attend numerous training events. Several permits issued this past year had very short turnaround times, necessitating the use of GIS tools. The templates made it possible for staff not previously skilled in GIS to meet their deadlines.

A further effort to educate and assist DOW staff in the use of GIS tools resulted in new intranet pages accessible via the DOW intranet page. These pages include a discussion of GIS, including its history, application examples and reference information. Also included are a Frequently Asked Questions (FAQ) page and a link to the GDA Help Desk (\\epdatadep\dowdata$\Programmatic_data\GDAHelpDesk\GDAHelpDesk.mdb), through which DOW staff can ask questions, report errors and make requests for finished products or project assistance.



NHD Stewardship

One new initiative DOW has agreed to undertake is stewardship of the National Hydrography Dataset (NHD), a comprehensive set of digital spatial data representing the surface water of the United States using common features such as lakes, ponds, streams, rivers, canals and oceans. These data are designed to be used in general mapping and in the analysis of surface-water systems using GIS. In mapping, the NHD is used with other data themes such as elevation, boundaries and transportation to produce general reference maps (http://nhd.usgs.gov/).

James Seay, DOW's geoprocessing specialist, has taken the lead in Kentucky for conducting NHD data stewardship to improve upon the existing NHD and keep it continuously updated. Several division personnel will be trained in this process, but any division personnel discovering an error or having a suggestion should inform the stewardship team via the GIS and Data Analysis Help Desk (\\epdatadep\dowdata$\Programmatic_data\GDAHelpDesk\GDAHelpDesk.mdb). An important part of the NHD stewardship process is a built-in system of tracking actions taken as updates are made, which becomes part of the permanent metadata for each record edit and allows future users to fully understand the process the data have undergone

Water Database

GDA staff members were also faced with the task of determining if the continued development of the departmental database (COMPASS) was feasible and if not, finding a suitable replacement. GDA staff discovered a possible database currently being developed in Alabama (ALA-WADR, Alabama Water-Quality Assessment and Monitoring Data Repository) that was very similar to COMPASS in structure, but with a more user-friendly interface.

The division is entering into collaboration with several other states in the southeast region to conserve funds by each developing modules for use in the overall system. GDA mapped out a way to utilize the reference tables constructed for COMPASS in this new database and is currently working with DEP programmers to adapt and develop this database for Kentucky.

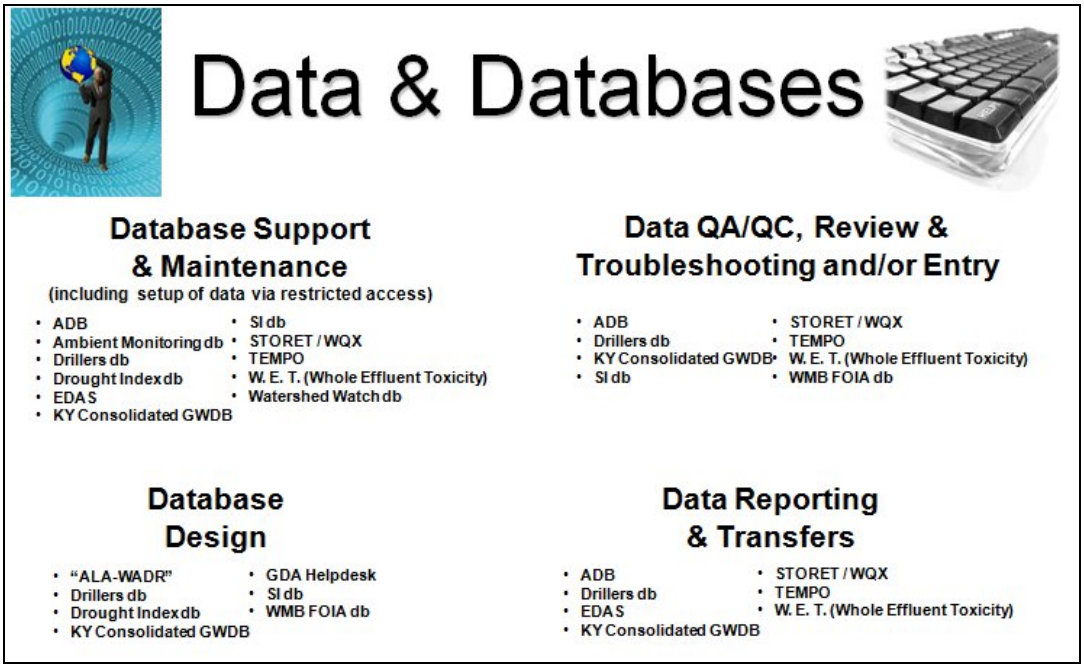
As was intended for COMPASS, the new database will add efficiencies by providing a single repository for data currently stored in various databases throughout the division. GDA will be responsible for maintenance and troubleshooting until data from those databases can be migrated to this new departmental database. This support for other groups in the division comprises anywhere from 20% to 30% of GDA staff time in researching those databases and making repairs. This need has grown due to attrition of key employees from the various sections containing those databases. These responsibilities are indicated below:

Establishing Priorities for GDA

Being a newly-formed section, GDA staff members faced the challenge over the past year of defining their new roles and responsibilities within their branch and also at the division level, while maintaining existing duties brought in with each staff member including:

- ✓ Well installation record review and entry for the Drillers Program
- ✓ Maintenance of the Kentucky Consolidated Groundwater Database
- ✓ Statistical analyses for 319(h) Groundwater Basin Reports
- ✓ Division Quality Assurance Officer
- ✓ Division GIS specialist
- ✓ Map Modernization Program
- ✓ Division Web page development and maintenance

Because of the division-wide need for GIS, database and analysis assistance, much of the year was spent prioritizing and responding to the numerous



requests that began pouring in within days of the section's establishment. Responsibilities and expectations of the section are still being shaped and defined.

Quality Assurance Program

The Division-wide quality assurance program is housed within the GDA, within the Watershed Management Branch. However, the quality assurance officer position and duties encompass all DOW activities.

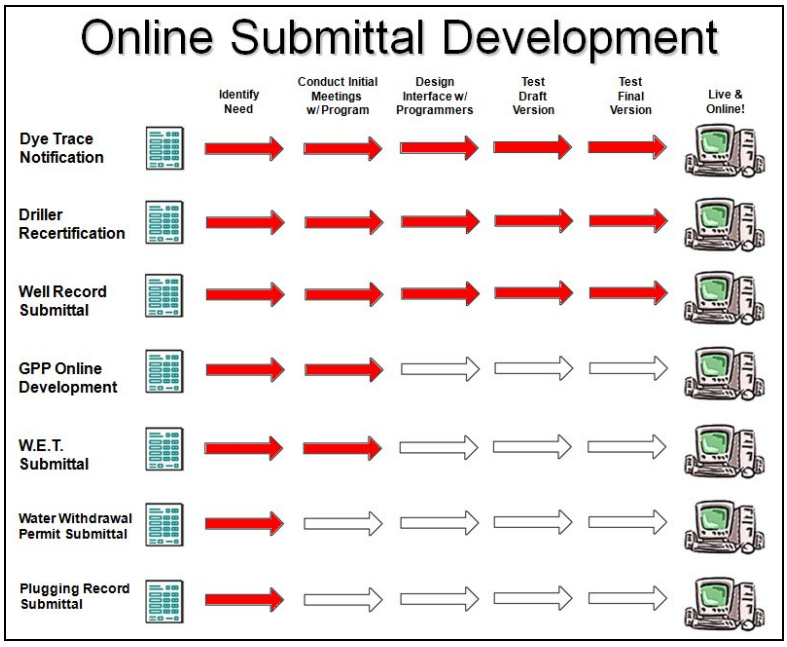
Quality Assurance activities for the fiscal year 2009 included Quality Assurance Project Plan (QAPP) review, monthly meetings Division quality program staff, review of the quality management plan for the Department of Environmental Protection, preparation of standard operating procedures (SOP), finalization of documents to be used in contracting and data review by DOW staff, and creation of QA web pages for internal DEP staff and the public. All funding for the quality assurance program comes from adjunct programs, as there are no dedicated resources to the program.

Specific elements of the quality assurance program for Kentucky that were accomplished in 2009 are:

- ✓ 20 QAPPs reviewed for environmental monitoring programs
- ✓ 24 SOPs reviewed for water quality sampling
- ✓ 18 QA Meetings attended
- ✓ DEP Quality Management Plan edited and reviewed
- ✓ QAPP, SOP and quality evaluation report templates developed for internal and external agency use
- ✓ Contract clauses developed for increased QA in outside contracting
- ✓ Three presentations on QA developed and presented to DOW staff
- ✓ Five Web pages were developed and published for the intranet and internet
- ✓ Discharge monitoring report data review

Online Submittal Development

GDA was also tasked with identifying any processes which could be adapted for electronic submittal thus minimizing data entry time for staff members while at the same time providing an



additional level of QC to the process. To date, seven processes have been identified within WMB for online submittal development; three have been completed.

Nonpoint Source and Basin Team Coordination Section

Watershed Based Plan

A watershed-based plan is a framework for managing water quality and quantity within a watershed. Since watersheds don't often follow county or city boundaries, these plans involve partners from many interested parties working together toward a common goal of water that supports its uses. The Environmental Protection Agency since the 2004 grant year has required watershed based plans for Section 319(h) Nonpoint Source Implementation grants prior to funds being spent on implementation of Best Management Practices. In 2008-2009, the Nonpoint Source and Basin Team Section accepted one watershed based plan for remediation of acid mine drainage in the Lower Rock Creek of McCreary Co.

Lower Rock Creek Watershed Based Plan

The Lower Rock Creek Watershed lies within the Big South Fork of the Headwaters of the Cumberland River in McCreary County, Kentucky (Fig. 1). Rock Creek originates in Pickett State Park, Tennessee, courses north into Kentucky, and flows 21.9 miles in McCreary County. The Lower Rock Creek Watershed is predominately forestland managed by the U.S. Department of Agriculture Forest Service (USFS), with pre-law mining. White Oak Creek was placed on the 303(d) list based on impairments of habitat alteration, and impairments attributed to low pH and metals, other than mercury. The impacted area of the Rock Creek watershed includes White Oak Creek from Cabin Branch downstream to the confluence with Rock Creek at White Oak Junction, as well as Rock Creek from White Oak Junction to the confluence with the Big South Fork.

Water quality data were analyzed from 41 portals and seeps in the project area beginning in 1999. Acid and metal loading was calculated for each portal and passive treatment options were explored using the water chemistry analysis for each portal discharge. Acid loading was calculated for each tributary and in the spring of 2000 dosing of selected tributaries with sand-sized limestone particles began. Within two months the flow out of Rock Creek into the Big South Fork of the Cumberland River changed from net acidic to net alkaline. After four months, similar results were obtained in White Oak Creek, a major source of AMD to Rock Creek.

Cooperation between 12 state and federal agencies and conservation organizations has led to major improvements to the water quality in Lower Rock Creek. Funding for reclamation in the watershed was provided by several Task Force partners and included two EPA 319(h) Nonpoint Source Implementation grants. Acid loading from Rock Creek into the Big South Fork of the Cumberland River has been reduced from 1452 tons annually to near zero after completion of the projects. Fish populations are rebounding with increases in numbers, diversity of species, and numbers of intolerant species. At the Paint Cliff section of Rock Creek no fish were found in two out of the three sampling periods prior to the AMD abatement efforts in the lower Rock Creek watershed. In the one sampling period that fish were found prior to construction activities only six species were found. A total of 61 fish representing 16 different species were found during the last sampling period after

completion of the previous AMD abatement projects (Fig. 2). Brown trout, rainbow trout, smallmouth bass, spotted bass, largemouth bass, and rock bass are now routinely found in this once virtually dead section of Rock Creek. (Carew 2007).

Nonpoint Source Success Stories

Cromer Ridge Watershed Restoration

Last year was very successful at Cromer Ridge. As improvements and restoration progressed, the amount of illegal ATV and four-wheeler traffic declined.

Early in the year the main emphasis was on closing the trail system adjacent to the Rockcastle River. This trail and the associated playground areas were dumping sediment directly into the Rockcastle River and were threatening several endangered mussel species. Erosion control BMPs, such as water bars, sediment basins, and seeding, were installed and the trails were closed with earthen barriers and brush.

Later in the year the focus changed to the eroding ridge tops near the I-75 entrance. In this area 10 to 15 feet of soil had eroded and exposed bedrock and unfertile sand. The area was reshaped, erosion control structures were installed, fertile soil was imported from the I-75 reconstruction, and the area was seeded.

With the help of a private landowner, old tires and garbage were also removed. Law enforcement


Ridge Before Restoration


Ridge After Restoration

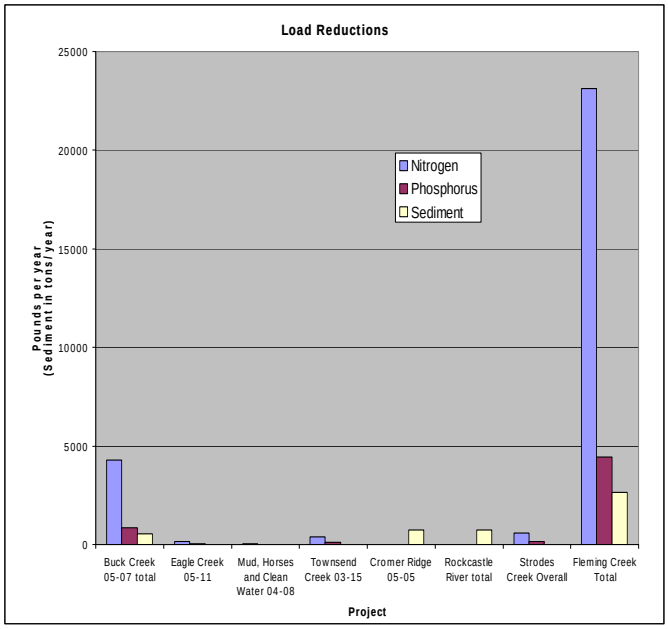

Field Before Restoration


Field After Restoration

continued by Forest Service law enforcement personnel in cooperation with the Laurel County Sheriff's office. Numerous citations were written for illegal use of the area

Load Reductions

Section 319(h) of the Clean Water Act addresses Nonpoint Source pollution. To meet the requirements of 319(h), the goal of the Nonpoint Source & Basin Team Section is to determine Best Management Practices (BMPs) that will reduce the load of specific nonpoint source pollutants that enter Kentucky waterways. DOW project Technical Advisors provided technical assistance on the calculation of load reductions, and then reported these values to EPA using the Grant Reporting and Tracking (GRTS) database. Projects reporting load reductions for the 2008 calendar year include Strodes Creek, Fleming Creek Clean Water Action Plan, Cromer Ridge Watershed Restoration and others.



Strodes Creek Success Story

Strodes Creek, a main headwater stream of the South Fork of the Licking River, is a tributary of Stoner Creek. The stream is approximately 25 miles long and flows through 52,000 acres of the Inner Bluegrass landscape. The Strodes Creek watershed drains the northern side of Winchester in Clark County, and the lower third of the watershed in a rural area of Bourbon County. Strodes Creek, from Hoods Creek to Green Creek, was listed as impaired citing pathogens, nutrients, siltation, and organic enrichment/low dissolved oxygen. The impairments were caused by nonpoint source pollution from agriculture, construction, urban runoff/storm sewers, and habitat modification other than hydro-modification, as well as municipal point source pollution.

Strodes Creek Watershed

To improve water quality in the Strodes Creek watershed, their 319(h) Nonpoint Source Implementation grant project focused on home owner wastewater treatment systems (failing septic tanks) and agricultural BMPs. Wastewater treatment systems in need of repairs were evaluated for existing system components, amount of discharge, location of discharge, watershed impact, available repair area, and feasibility of wastewater collection line installation. The agricultural component of the project provided fencing to exclude cattle from

selected streams and remove livestock from riparian land by easement (land acquisition).

Farm in Strodes Creek Watershed

Home owners in the Hancock Valley and Wayland Heights subdivisions were offered wastewater maintenance assistance to clean out septic systems and make minor repairs on a limited number of systems. Systems in need of repairs were upgraded according to selected criteria including existing system components, discharge amounts and locations, as well as potential impact to the watershed. Agricultural BMPs were installed, including fencing along selected tributaries in the Strodes Creek watershed, and alternative water supplies were provided for livestock fenced out of the tributaries.

For more information on this project, visit Strodes Creek Conservancy: http://www.strodescreek.org.

Water Quality Branch

The Water Quality Branch (WQB) has three sections and two staff-level positions – the **Monitoring Section**, the **Total Maximum Daily Load (TMDL) Section** and the **Water Quality Certification Section** and two environmental scientists - a water quality standards and assessment biologist and the Wild Rivers Coordinator. Water Quality staff are responsible for multiple functional areas of planning, monitoring and assessing surface water quality.

The Monitoring Section surveys and assesses surface waters for biological, chemical and habitat components: programs include reference condition waters, randomly chosen waters for probabilistic studies, overall biological community health, a fish tissue program, and intensive surveys that are project specific. Results of these surveys and analysis of the data contribute to the parameters required to develop surface water standards, and make up the reporting elements of annual reports to Congress.

The TMDL Section monitors and assesses surface waters for impaired waters, both listing new waters that don't meet water quality standards, and to *remove currently impaired waters that have improved due to on-the-ground projects, more* stringent permitting requirements, and/or improved data.

The Water Quality Certification section administers permits and considers impacts for proposed dredging and filling activities in waters and wetlands of the Commonwealth.

The Wild Rivers Coordinator monitors and reports on the condition of the state and national wild and scenic river corridors, as well as working to obtain new lands within corridors to protect and maintain high quality, scenic waters.

The Standards and Assessment biologist develops water quality standards for promulgation into Kentucky law, and prepares data submissions and the required report on water quality to Congress.

Quality Assurance

Significant improvements were made in the area of quality assurance in 2008-09. Most of the core standard operating procedures documents used by the WQB were refined to improve clarity, incorporate more specific quality assurance procedures, and standardize formats. Also, quality assurance project plans were updated and refined to clarify program objectives, provide more detail on program procedures, and incorporate more standardized quality assurance procedures across programs.

Surface Water and Biological Monitoring

Clean Lakes Program

The monitoring section collects water chemistry and chlorophyll *a* data from lakes and reservoirs within each basin management unit three times during the year. Spring and summer samples were collected from 17 reservoirs in the Salt/Licking watersheds in year 2009. Data from this program are being used to help develop nutrient criteria for Kentucky's lakes and reservoirs.

Reference Reach

Reference reach stations represent the "least-impacted" stream segments within geographical regions of Kentucky. These stream segments have high biological integrity and are used to develop biological criteria to assess aquatic life use. From January through July 2009, the monitoring section collected fish community, macroinvertebrate community, diatom community, habitat and chemistry data from 18 reference reach streams within the Salt/Licking River basins. To assist in nutrient criteria development, nutrient water chemistry data was also collected at these sites on a bimonthly basis.

Ambient Water Chemistry

Water chemistry data was collected from an ambient network of stations. These data are used to determine trends and assess aquatic life use. From January through March of 2009, water chemistry samples were collected from ambient and rotating stations in the Kentucky River watershed on a monthly basis, while non-basin ambient stations were collected every other month. Starting in April 2009, the basin management unit (BMU) cycle changed to the Salt/Licking River watersheds. Ambient and rotating stations within these watersheds were sampled monthly, while the non-BMU ambient stations were collected every other month.

Ambient Surface Water Special Project

A report on water quality trends using DOW ambient surface water data was completed by the U.S. Geological Survey. Analyses were conducted for 15 physicochemical water quality properties at 37 stations located throughout the commonwealth for the period 1979 – 2004. Water quality variables were collected at these long-term water quality stations located in drainage basins ranging from 62 to 6431 square miles. These stations had been established to monitor water quality on an eight digit HUC and mid-eight digit HUC level, with additional water quality stations located at inflow and outflow tributaries of major reservoirs. For the full report, contact Randall Payne in the Water Quality Branch.

Probabilistic Water Quality Monitoring

Staff in the probabilistic monitoring program collect macroinvertebrate community, habitat and chemistry data from a set of probabilistically chosen sites within the targeted basin management unit of the year. Data collected by this program will be used to assess aquatic life use throughout the watershed. From January through July 2009, 27 streams were sampled within the Salt/Licking basin as a part of this program.

Probabilistic Fish Tissue Monitoring

Kentucky has an on-going statewide fish consumption advisory for mercury, stating that children and women of childbearing age should limit their intake of freshwater fish to one meal a week. Data collected over the past few years indicates that this advisory needs to be updated to reflect current conditions. The monitoring section initiated a fish tissue project in 2009 to focus on mercury concentrations in black bass. As of July 2009, 40 black bass samples have been collected at lake and large river stations throughout the state.

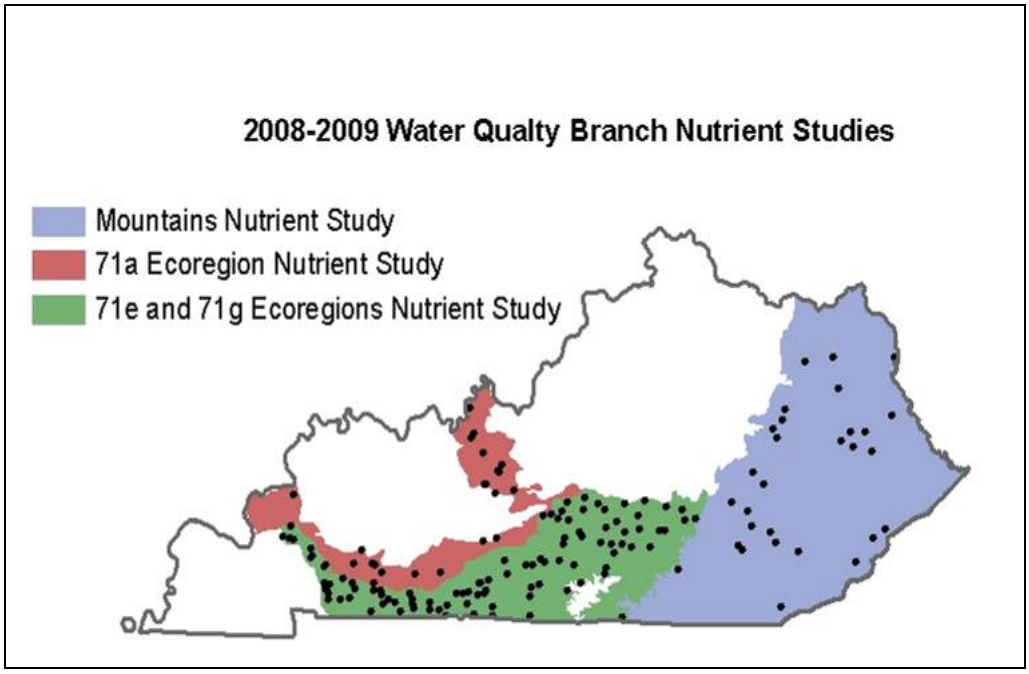
Nutrient Special Studies

The monitoring section contributes to developing of nutrient criteria by designing and conducting studies on identifying nutrient levels that impact biological communities. The studies focus on specific regions and stream types so that the influence of regional

and physical factors on nutrient effects can be minimized. In 2008-09, the monitoring section has been involved with 3 studies in the Crawford-Mammoth Cave Uplands (71a ecoregion), the Mountains (ecoregions in the eastern part of Kentucky), and the Western Pennyroyal Karst/Eastern Highland Rim (71e and 71g ecoregions).

These studies have been made possible by pursuing partnerships for the collection of the water nutrient samples. Section 106 supplemental funds, 104(b)3 grants and interagency agreements have been successfully obtained. Activities in 2008-09 include study design and planning, sampling, sample analyses and data summaries and reporting.

Study Name	Project Design and Planning	Sampling	Sample Analysis and Data Summaries	Reporting	Partners Involved
Reference Reach Nutrient Study			●	●	DOW, WQB
71a Ecoregion Nutrient Study		●	●		USGS
Mountains Nutrient Study		●	●		KGS
71e/71g Ecoregion Nutrient Study	●				WKU



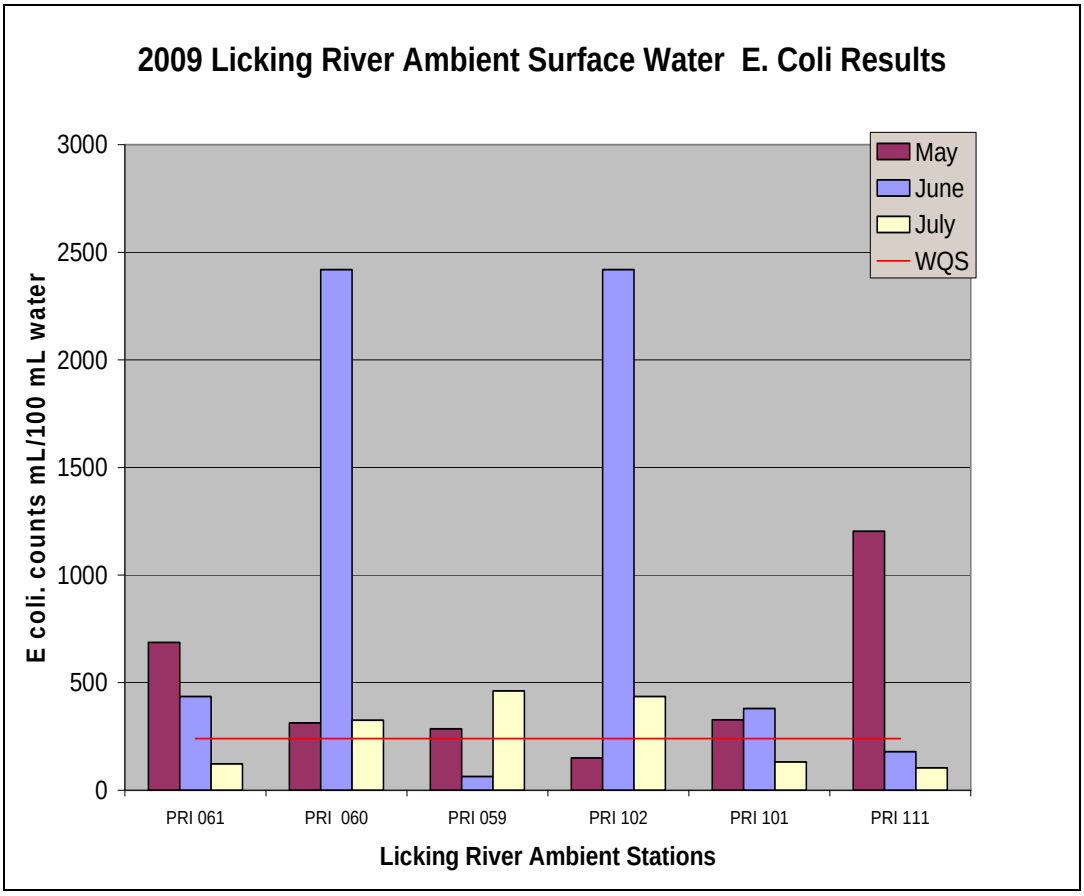
Elkhorn Creek in Pike County Intensive Survey

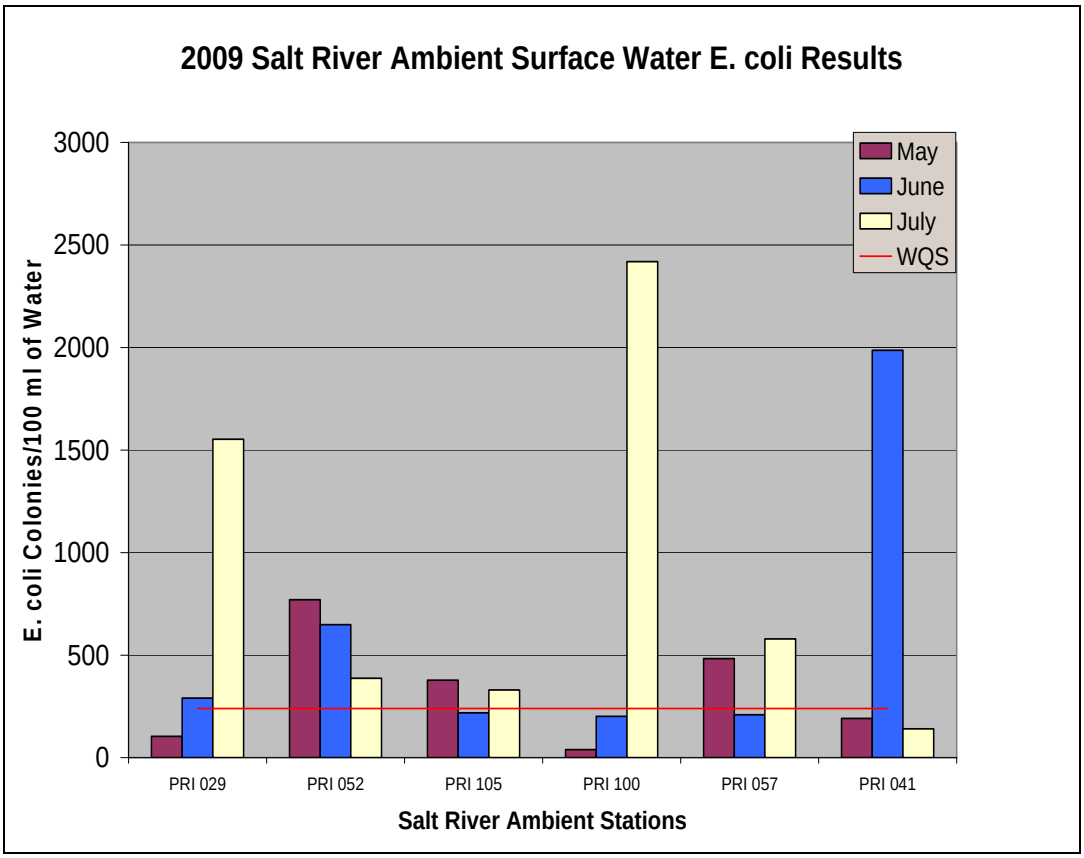
As part of the 2008 Nonpoint source monitoring grant, staff collected biological, chemical and bacteriological data from Elkhorn Creek in Pike County from Spring 2008 to Spring 2009. Data collected from this project will be used to develop a TMDL for this stream that has been assessed as not meeting its aquatic life and primary contact recreation uses.

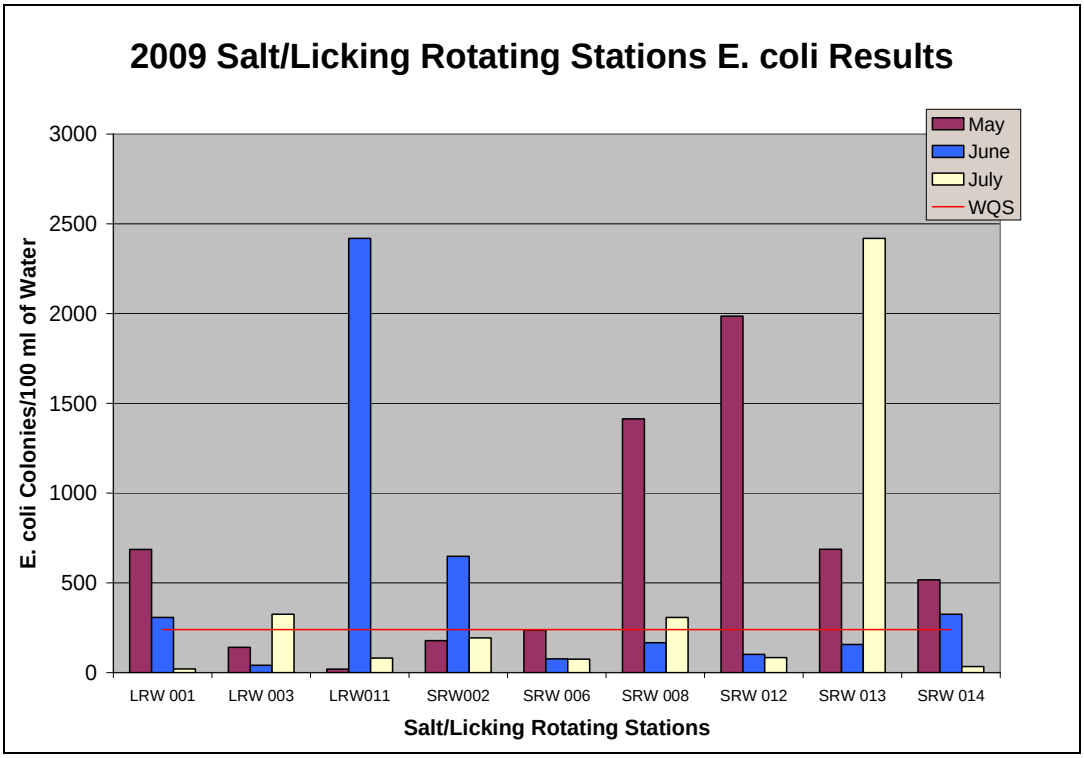
Bacteriological Sampling

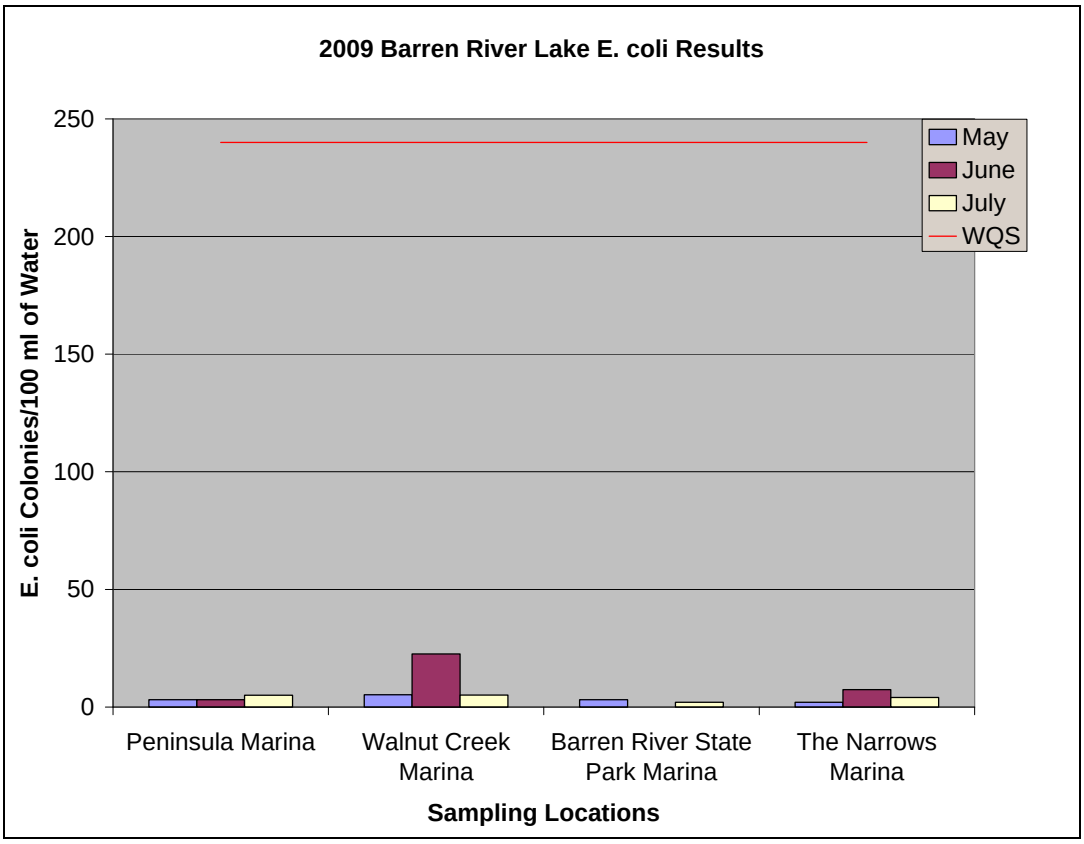
Monitoring for pathogens in 2009 included *Escherichia coli* (*E. coli*) sampling in the Salt and Licking Rivers watershed management units, and *E. coli* sampling in two lakes in the Green River watershed management unit. Ambient and rotating stations within the Salt/Licking basins were sampled on a monthly basis for *E.coli* for three months of the 2009 primary contact recreation season (May – July) to determine if the "swimmable" (primary contact recreation) use was being supported.

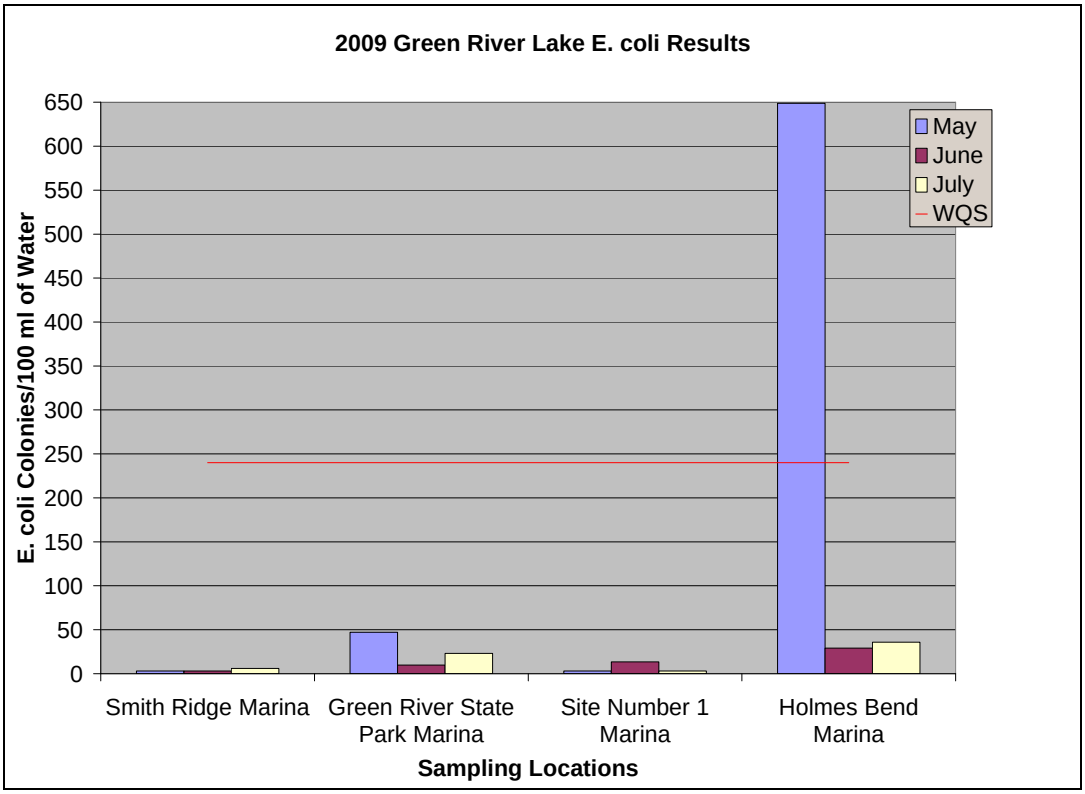
Results of the bacteria monitoring are illustrated below. The red line on the graphs indicates the water quality standard (WQS) of 240 colonies per 100 mL of water. Only one stream station in the Salt River has met its primary contact recreation use for 2009; one lake station has not met that same standard.




2009 Salt River Ambient Surface Water E. coli Results
E. coli Colonies/100 ml of Water
3000
2500
2000
1500
1000
500
0
May
June
July
WQS
PRI 029
PRI 052
PRI 105
PRI 100
PRI 057
PRI 041
Salt River Ambient Stations


2009 Salt/Licking Rotating Stations E. coli Results
E. coli Colonies/100 ml of Water
3000
2500
2000
1500
1000
500
0
May
June
July
WQS
LRW 001
LRW 003
LRW011
SRW002
SRW 006
SRW 008
SRW 012
SRW 013
SRW 014
Salt/Licking Rotating Stations


2009 Barren River Lake E. coli Results
E. coli Colonies/100 ml of Water
250
200
150
100
50
0
May
June
July
WQS
Peninsula Marina
Walnut Creek Marina
Barren River State Park Marina
The Narrows Marina
Sampling Locations


2009 Green River Lake E. coli Results
E. coli Colonies/100 ml of Water
650
600
550
500
450
400
350
300
250
200
150
100
50
0
May
June
July
WQS
Smith Ridge Marina
Green River State Park Marina
Site Number 1 Marina
Holmes Bend Marina
Sampling Locations

Triennial Review

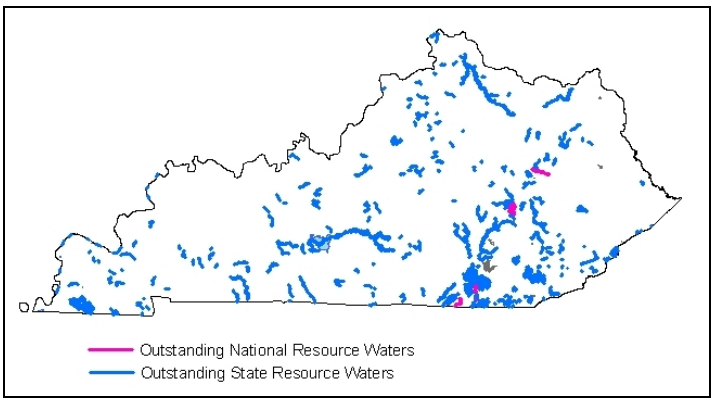
The most recent triennial review of the Commonwealth's water quality standards undertook several significant issues to provide greater protection to aquatic resources.

Designated Uses

A total of 223 waters were added to the Outstanding State Resource Waters (OSRW) designated use category. These additions include special use waters (exceptional and reference reach) identified in KY Administrative Regulations.

Anti-degradation

The anti-degradation regulation states that water quality cannot be permanently lowered and generally excludes future permanent discharges directly to high quality waters. A significant result to the anti-degradation rule are the inclusion of five newly designated Outstanding National Resource Waters (ONRW). Four of those five water bodies are located within the boundary of the Daniel Boone National Forest and one is within the boundary of Reelfoot National Wildlife Refuge.



Water Quality Criteria

Water quality criteria within the regulations of the Kentucky water quality standards are the benchmarks for attaining specific designated uses for the commonwealth's surface waters. The following conditions were added or updated to reflect more specific definitions or to increase protective standards for certain water quality parameters.

1. Dissolved oxygen criterion is a minimum of 5.0 mg/L instantaneous reading for Outstanding State Resource Waters.

2. Addition of the criterion for methyl-mercury residue in fish tissue. This is now the primary pollutant form to monitor for mercury concentration and contamination related to fish consumption by the public.

3. Definition of "acute criteria" was updated giving specific time parameters to this definition per applicable pollutant.

4. Definition of "chronic criteria" was updated giving specific time parameters to this criterion per applicable pollutant.

Numeric Nutrient Criteria

The next triennial review in 2011 will focus on promulgation of numeric nutrient criteria. The division submitted its revised nutrient criteria development plan to U.S. EPA Region 4 in January 2009; it was subsequently approved. This plan targets the promulgation of numeric nutrient criteria for wadeable streams, lakes and reservoirs. A paper has also been developed outlining the strategy for monitoring and identifying response indicators to concentrations of nutrients.

Numeric nutrient criteria development for larger, boatable waters is just beginning to undergo similar process review. Beginning August 2009 monitoring

of chlorophyll *a* and phytoplankton will be added to the ambient water quality monitoring program.

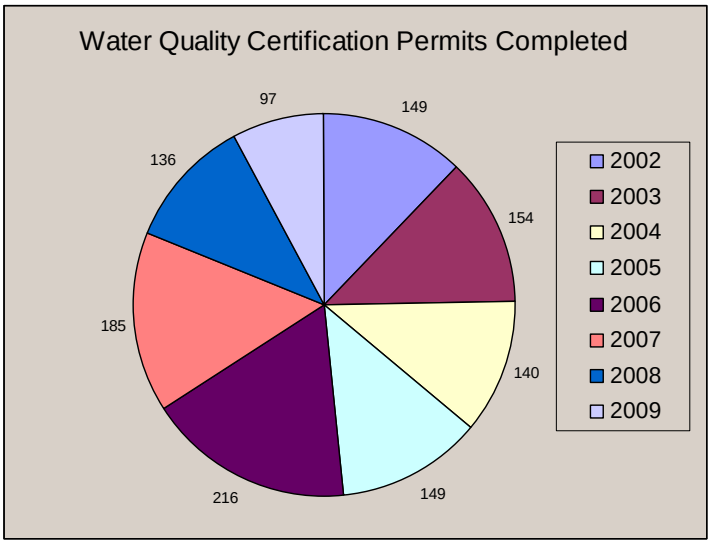
Water Quality Certification

The Water Quality Certification Section conducted 481 site visits this year. These were divided into technical visits, mitigation review team visits, monitoring and compliance visits, EPA Study Sites, and application review visits. The staff continues to assist applicants in minimizing and avoiding impacts to the waters of the Commonwealth.

In October 2008, new regulations for the Water Quality Certification Section resulted in establishment of application fees for permitting activities.

Permitting

During 2008-2009 there was a decline in Water Quality Certifications written, likely related to the declining economy, as illustrated below.



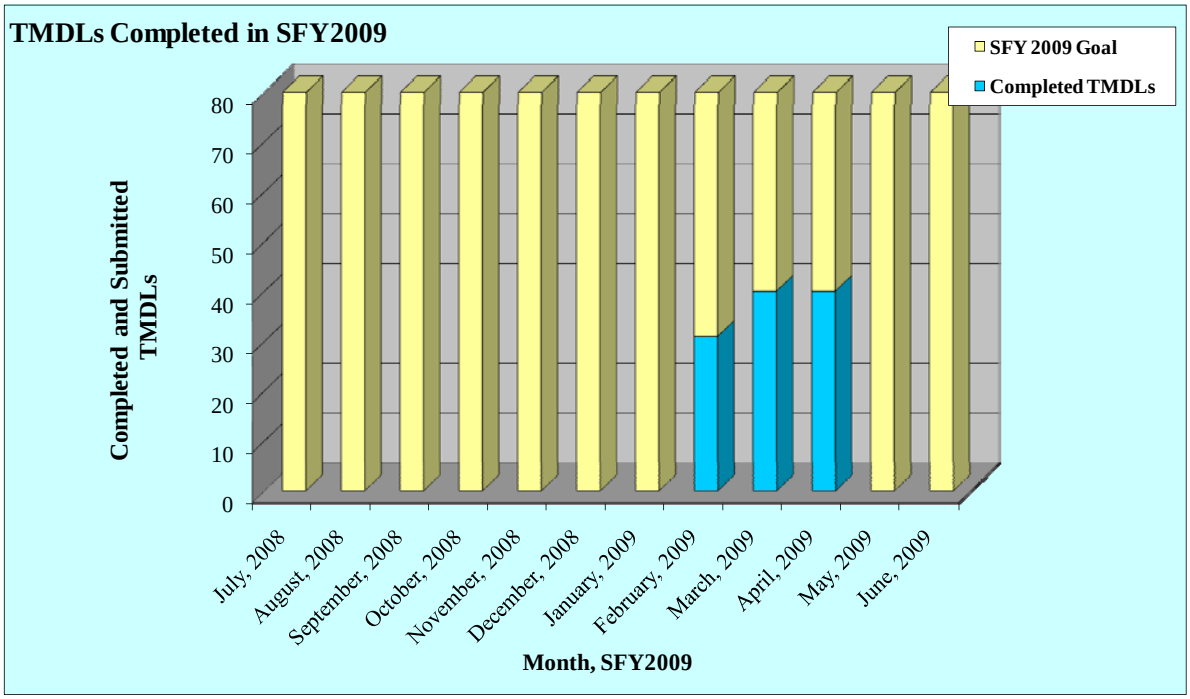
Wetlands

The Water Quality Certification Section closed out a Wetland Program Development Grant in May 2009. The grant's main focus was to investigate the feasibility of assuming Section 404 duties from the U.S. Army Corps of Engineers. As of the current time, this effort has been suspended.

The remainder of this grant fund was used to design a survey of stakeholders for a State Wetland and Stream Conservation Plan (SWCP). An SWCP is a State's written strategy -- somewhat like a business plan -- to protect wetlands and streams. Over 800 stakeholders were surveyed, and respondents' views and insights were collected in a report. This report is available on the Water Quality Certification Section's Webpage: http://www.water.ky.gov/permitting/wqcert/.

Total Maximum Daily Loads (TMDLs)

The TMDL Section of DOW has written and received formal EPA approval for 40 pathogen TMDLs during the 2009 Fiscal Year. This includes 9 TMDLs in the Little River watershed, 20 TMDLs in the Upper Green River watershed and 11 in the Lower Cumberland River watershed. Below is a table showing each individual Pollutant-Waterbody



Combination (PWC) with a TMDL approved by EPA in 2009.

Wild Rivers

Money generated from the sales of nature license plates is placed into the Heritage Land Conservation Fund (HCLF) which is used to purchase property for conservation. Ten percent of the HCLF is dedicated to the Wild Rivers Program for purchase of property along the nine state wild river corridors. In January 2009, the Wild Rivers program received $315,000 from the HCLF to purchase property in Hart County within the Green River buffer corridor.

Morgan Jones, the wild rivers program coordinator, retired in November of 2008. The position was not filled during the 2009 state fiscal year.

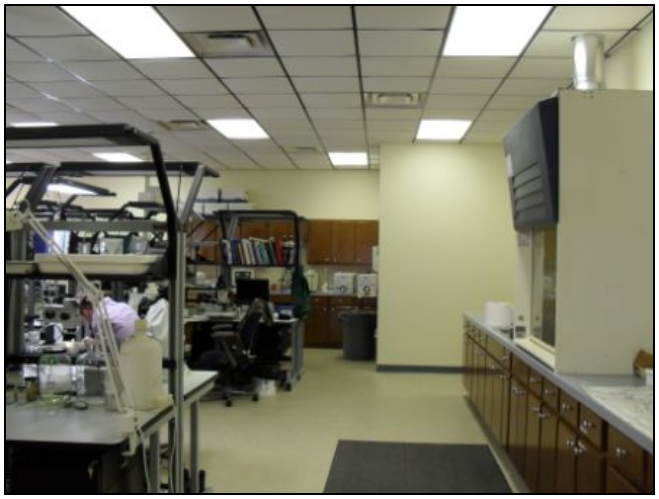
Laboratory Re-Location

The monitoring section of the WQB led the planning and design of the new laboratory facilities and was instrumental in coordinating the necessary renovations to the new building. The new facility at 150 Fair Oaks Lane provides staff with a modern, safe and clean environment for processing and analyzing biological and bacteriological samples. All activities are now housed within one laboratory facility which allows interaction among the disciplines and sharing of equipment and taxonomic references more easily.

New ergonomic workstations allow staff large working areas that can be adjusted to fit each individual's needs. The new laboratory provides a

safer working environment with larger working areas, mold-free walls and excellent lighting.

From the fall 2008 through spring 2009, laboratory operations were shut down as a result of the move. The time period with no laboratory space coincided with the peak time when biological samples are typically analyzed, and sample backlogs were necessarily created. Despite not having a lab for these critical months, monitoring staff successfully stayed on track for 2009 monitoring activities and have dramatically reduced the 2008 sample backlog.



Department for Environmental Protection
Division of Water

FY 2009 OPERATIONAL PLAN

Objective 1.0 --- Develop sustainable permitting programs that provide sound decisions within regulatory time frames.

□ **Tactic 1.1** Maintain progress toward reducing and/or maintaining zero permit and data entry backlogs.
- **Measures:**
  - The total number of permits pending
  - The total number of permits pending that exceed regulatory time frames
  - The percentage of permit reviews completed within regulatory time frames
  - The percentage of permit reviews that exceed regulatory time frames
- **Baseline:** The SFY 2008 DOW permit backlog
- o **Action 1.1.1:** Maintain and enhance TEMPO report tracking to target efforts toward backlog elimination. Evaluate and make adjustments as necessary on a weekly basis.
- o **Action 1.1.2:** Allocate staff as necessary to assist in permit reviews and data entry.
- o **Action 1.1.3:** Ensure permits are issued within regulatory time frames

□ **Tactic 1.2** Implement organizational structure that provides cross-program training and flexibility in assignment of staff to meet needs as they arise.
- **Measures:** Employee productivity rates for permitting, data entry and scanning
- **Baseline:** The SFY 2008 productivity rates
- o **Action 1.2.1:** Cross train staff across regulatory programs. Evaluate workload and production on a quarterly basis and adjust assignments accordingly.
- o **Action 1.2.2:** Cross train scan staff to perform data entry. Monitor productivity and workload of scan staff on a monthly basis and adjust data entry assignments accordingly by December 2008.
- o **Action 1.2.3:** Survey division personnel interests, technical/programmatic strengths, and interest in cross-program assignments by March 2009.
- o **Action 1.2.4:** Optimize federal time-code use by division personnel by Oct. 15, 2008.

□ **Tactic 1.3** Evaluate processes to improve efficiency.
- **Measures:**
  - Employee productivity rates for permitting, data entry and scanning.
  - Number of eMORs submitted
  - Number of staff trained in LEAN
  - Number of LEAN program evaluations
- **Baseline:**
  - SFY 2008 backlog percentages.
  - SFY 2008 employee productivity rates.
  - Number of eMORs submitted July 2008.
- o **Action 1.3.1:** Implement electronic receipt of storm water general permit notices of intent and coal general permit notices of intent by June 30, 2009.
- o **Action 1.3.2:** Evaluate opportunities for electronic receipt and processing of other applications and data by June 30, 2009.
- o **Action 1.3.3:** Develop a plan for implementing submittal of DMRs electronically by March 30, 2009.
- o **Action 1.3.4:** Complete implementation and promote the use of drinking water eMORs and data entry screens for Drinking Water Watch. Evaluate software packages available for Safe Drinking Water Act (SDWA) electronic data submittal and make a recommendation by Oct. 30, 2008.
- o **Action 1.3.5:** Key staff to attend LEAN training and develop a prioritized schedule for evaluating permitting and data entry processes by March 31, 2009.

- **Action 1.3.6:** Educate staff in the capabilities of GIS, and develop and institutionalize the use of GIS tools for programmatic use, data/information assessment, and trend analysis. Ongoing.
- **Action 1.3.7:** Complete the floodplain map modernization process for the remaining 34 counties in Kentucky and identify necessary procedures for keeping them up to date by Sept. 30, 2008.
- **Action 1.3.8:** Develop a plan for making improvements to and fully implementing a water resources database by June 30, 2009.
- **Action 1.3.9:** Institute a process to evaluate how each permitting program currently and potentially functions within the context of a watershed approach and focus by June 30, 2009.

□ **Tactic 1.4** Identify activities that are not providing sufficient added value and target for elimination, or shift to other responsible parties.

- **Action 1.4.1:** Evaluate the potential elimination of the oil and gas registration program. Initiate regulatory revisions as appropriate by February 2009.
- **Action 1.4.2:** Expand the use of agreements with water and sewer utilities which have engineering resources to conduct water line extension and sewer line extension reviews within their systems and with DOW oversight.
- **Action 1.4.3:** Evaluate DOW's Web site and make improvements to better deploy information regarding permit status, data and FOIA documents in order to reduce the request demand DOW staff.
- **Action 1.4.4:** Identify the process and promote the concept of developing MS4 qualified local programs.

□ **Tactic 1.5** Update fee regulations to provide resources to meet federal and state obligations and improve permitting programs.

- **Action 1.5.1:** Finalize 401 WQC fee regulations. File KPDES and drinking water laboratory certification fee regulations by September 2008.
- **Action 1.5.2:** Evaluate remaining permitting programs and develop a prioritized schedule for fee update or development by December 2008.
- **Action 1.5.3:** Develop and file at least one additional fee regulation by March 2009.

Objective 2.0 --- Protect and improve the quality and management of water resources.

□ **Tactic 2.1** Fully implement wet weather compliance programs.

- **Measures:**
  - Number of delisted waters
  - Number of CSO long-term control plans approved
  - Number of SSOPs approved
- **Baseline:**
  - The 2000 impaired waters list
  - Number of approved long-term control plans in July 2008
  - Number of approved SSOPs in July 2008
- **Action 2.1.1:** Perform all necessary reviews and inspections associated with CSO / SSO agreements. Ongoing, however, 50 percent will be completed by Sept. 30, 2008, and the remaining completed that come due this SFY completed by June 30, 2009.
- **Action 2.1.1:** Perform all necessary reviews and inspections associated with
- **Action 2.1.2:** Have each community with recurring SSOs (SSO occurring more that once during a 12 month period) operating under an approved sanitary sewer overflow plan by March 2009
- **Action 2.1.3:** Issue the next generation of municipal separate storm sewer system permits (MS4) by December 2008 and perform all necessary reviews and inspections.
- **Action 2.1.4:** Issue the next generation of storm water construction permits and provide outreach to the regulated community regarding implementation. Three construction-related general permits will be in effect by December 2008 and outreach will take place in March 2009.
- **Action 2.1.5:** Update the Agriculture Water Quality Corrective Measures Protocol and best management practices and fully implement them by October 2008.

□ **Tactic 2.2** Reduce pollutants in surface waters.
- **Measures:** Number of delisted waters
- **Baseline:** The 2000 impaired waters list
- **Action 2.2.1:** Complete data collection and analysis necessary for development of nutrient criteria.
- **Action 2.2.2:** Where adequate data and effects thresholds exist, identify nutrient targets for waters impaired due to nutrients from point source discharges and develop an implementation plan for KPDES permitting by December 2008.
- **Action 2.2.3:** Initiate development of a statewide nutrient reduction plan for phosphorus and nitrogen consistent with the Mississippi River Gulf Hypoxia Task Force recommendations.
- **Action 2.2.4:** Work with agricultural agencies to incorporate DOW priorities in the prioritization of Farm Bill funding distribution, state cost-share programs funding, and the NPS program grants by June 2009.

□ **Tactic 2.3** Develop and implement watershed plans or TMDLs as appropriate.
- **Measures:**
  - Number of watershed plans developed
  - Number of watershed plans being implemented
  - Number of approved TMDLs
- **Baseline:**
  - Number of watershed plans developed by July 1, 2008
  - Number of watershed plans being implemented by July 1, 2008
  - Number of approved TMDLs as of July 1, 2008
- **Action 2.3.1:** Develop an implementation strategy for addressing the challenges in impaired watersheds by June 30, 2009.
- **Action 2.3.2:** Identify impaired waters that are candidates for bypassing TMDL development and develop a schedule for watershed planning for those waters by June 30, 2009.
- **Action 2.3.3:** Define what is / is not a watershed-based plan (WBP), the authority for approving WBPs, and determine the implications to permitting programs, TMDLs, Agriculture Water Quality obligations and baseline requirements, permit offsets, and water quality trading by June 30, 2009.
- **Action 2.3.4:** Develop 80 TMDLs by June 30, 2009.

□ **Tactic 2.4** Develop an outreach strategy for elected officials and the public regarding water quality and quantity.
- **Action 2.4.1:** Develop presentations regarding the importance and implications of the wet weather compliance programs, nutrient criteria, TMDLs, emerging pollutants and watershed planning for state and local officials as well as the regulated community. Develop a prioritized plan for presenting this information, and work with basin coordinators and basin teams to promulgate this information by March 30, 2009.

□ **Tactic 2.5** Implement new organizational structure to improve efficiencies in collection of water quality data and assessment and analysis of water quality conditions and trends.
- **Action 2.5.1:** Establish priorities for the new GIS and Data Analysis section in the Watershed Management Branch and begin evaluating water quality trends by Jan. 31, 2009.
- **Action 2.5.2:** Evaluate opportunities for improving water quality assessments and gaining efficiency in data collection with the new Monitoring Section in the Water Quality Branch.
- **Action 2.5.3:** Evaluate an inter-branch monitoring workgroup to identify data needs and develop prioritized monitoring plans.
- **Action 2.5.4:** Provide training in GIS tools and statistical analysis to improve planning, data analysis, and data assessment.

Objective 3.0 --- Ensure the integrity of water infrastructure through proper planning and promotion of sustainable infrastructure (SI) concepts.

□ **Tactic 3.1** Promote EPA's Sustainable Infrastructure (SI) Initiative.
- **Measures:**
  - Average annual volume of inflow and Infiltration
  - Average annual volume of water loss at PWSs

- Number of customers with water/sewer service
- Number of at-risk dams and number of people at risk below dams
- Annual number of boil water advisories
- Average annual water/sewer rates

▪ **Baseline:**
- SFY 2008 average annual volumes and rates
- Number of customers with water/sewer service by July 2008
- Number of at risk dams and number of people below at risk dams as of July 2008
- Number of boil water advisories during SFY 2008

o **Action 3.1.1:** Assemble a SI team within the division that will seek opportunities to promote SI internally and externally by August 2008.

o **Action 3.1.2:** SI team will identify key stakeholders from government, industry, and community groups to engage in promoting SI concepts and seek opportunities to develop collaborative efforts by February 2009.

o **Action 3.1.3:** SI team will evaluate internal processes to further integrate drinking water, wastewater and storm water planning by February 2008.

o **Action 3.1.4:** SI team will identify obstacles that hinder efforts to perform integrated water planning and provide recommendations to eliminate or work around these obstacles.

o **Action 3.1.5:** Evaluate the prioritization formulas for the CW and DW SRFs to incorporate criteria elements for SI concepts such as water conservation, green infrastructure and infrastructure planning on a watershed basis by October 2008.

o **Action 3.1.6:** Complete the Drinking Water Capacity Development Strategy and submit to EPA for approval by November 2008. Evaluate for regulation update by November 2008.

o **Action 3.1.7:** File proposed revisions to 401 KAR 5:006 to streamline the planning process and to promote wastewater infrastructure planning on a watershed basis by June 2008.

o **Action 3.1.8:** Develop a drought response plan by December 31, 2008, and begin to develop a statewide drought mitigation strategy. To the extent possible, incorporate water conservation and reuse into the strategy.

o **Action 3.1.9:** Further promote the EPA wastewater Capacity, Management, Operations and Maintenance (CMOM) program and facilitate its incorporation into enforcement agreed orders.

o **Action 3.1.10:** Further promote the drinking water Area Wide Optimization Program and evaluate opportunities to further integrate its concepts into the realm of infrastructure operational programs.

o **Action 3.1.11:** Further promote local governments' participation in the National Flood Insurance Program (NFIP).

o **Action 3.1.12:** Complete revisions to 401 KAR 4:030 – Dam Safety Regulations and file proposed regulations.

o **Action 3.1.13:** Develop an outreach strategy for state and local elected officials regarding the importance of sustainable infrastructure and implications of failing to provide for it by November 2008. Implement a schedule of presentations to make for legislative subcommittees, KIA and ADDs, and to local officials Include information about asset management tools, growth readiness and green infrastructure.

o **Action 3.1.14:** Develop a public education strategy to raise awareness regarding the benefits of water conservation, green infrastructure, asset management and other SI concepts.

o **Action 3.1.15:** Evaluate the pros and cons associated with issuing operational permits to public water systems and provide recommendations.

o **Action 3.1.16:** Incorporate decentralized and on-site wastewater infrastructure evaluation (via anti-degradation review process) into wastewater infrastructure planning, funding, and permitting by May 2009.

o **Action 3.1.17:** Work with local officials to identify and develop sustainable funding mechanisms for watershed planning and plan implementation.

□ **Tactic 3.2** Improve efficiency and decision making regarding water infrastructure.

▪ **Measures:**
- Time frame for reviewing wastewater facility plans
- Time frame for reviewing SRF projects

▪ **Baseline:** SFY 2008 review timeframes

- **Action 3.2.1:** Implement the new organizational structure and evaluate opportunities to improve our decision making processes to make them more efficient, effective and consistent by June 2009.
- **Action 3.2.2:** Work with other state and federal agencies to finalize a uniform environmental review process and initiate implementation by March 2009.
- **Action 3.2.3:** Identify where data gaps exist regarding stream flows throughout the state and develop protocols for incorporating gauging requirements in water withdrawal and KPDES permits.
- **Action 3.2.4:** Update operating agreement with KIA and submit to EPA for approval by March 2009.

Objective 4.0 --- Focus compliance efforts to meet federal and state obligations and promote objectives 1 – 3 of the division's operational plan.

□ **Tactic 4.1** Meet federal and state obligations.

- **Measures:**
  - Percentage of 106 work plan inspections conducted
  - Number of sanitary surveys performed
  - Compliance rates for KPDES permitted facilities
  - Compliance rates of PWS facilities
  - EPA submittal date for drinking water actions
- **Baseline:** FFY 2008 & 2009 106 & PWS Workplan

- **Action 4.1.1:** Complete drinking water primacy packages and submit to EPA for approval by January 2009.
- **Action 4.1.2:** Implement the State Review Framework recommendations that include updating the Enforcement Management System for KPDES permits and submit to EPA for approval by October 2008.
- **Action 4.1.3:** Complete revisions to the drinking water laboratory certification program and submit to EPA for approval by March 2009.
- **Action 4.1.4:** Update drinking water regulations to be consistent with federal regulations. File regulation package by March 2009.
- **Action 4.1.5:** Complete 106 and PWS workplan inspection commitments.

□ **Tactic 4.2** Promote objectives 1 – 3 of DOW's Operational Plan.

- **Measures:**
  - Number of wet weather inspections conducted
  - Number of investigations performed
  - Number of training events conducted for DOW staff
  - Number of training events for PWSs
  - Percent of inspections resulting in a compliance rating of No Violations Observed
  - Number of enforcement actions taken
- **Baseline:** 106 workplan commitments

- **Action 4.2.1:** Develop schedule of inspections for wet weather compliance programs (storm water construction, MS4, agriculture, etc.) focusing on watersheds that are impaired due to contributions from these sources by September 2008.
- **Action 4.2.2:** Provide training for new drinking water rules.
- **Action 4.2.3:** Focus compliance efforts on point source discharges identified as causing or significantly contributing to use impairment.
- **Action 4.2.4:** Develop a "menu" of projects to consider as Supplemental Environmental Projects (SEPs) for enforcement case settlement negotiations (i.e. gauging stations, alternate water supply development, nonpoint source projects, etc) by December 2008.

□ **Tactic 4.3** Improve efficiencies in compliance determinations.

- **Measures:**
  - Number of inspections completed
  - Percentage of facilities using e-notification
  - Number of training sessions developed
  - Percentage of inspectors trained
- **Baseline:** Curricula developed and implemented in 2008 and percentage of inspectors trained

- **Action 4.3.1:** Implement new organizational structure and evaluate for opportunities to improve efficiencies an inspection processes and increase inspectors' knowledge and understanding of the drinking water program.
- **Action 4.3.2:** Expand the availability of e-notification process to all regulated facilities by October 2008.

- **Action 4.3.3:** Establish an annual training curriculum to increase job knowledge, consistency and efficiency.

□ **Tactic 4.4** Identify activities that are not providing sufficient added value and target for elimination, or shift to other responsible parties.

- **Measures:**
  - Number of dam inspections
  - Number of Oil & Gas inspections vs. complaint investigations
  - Percent reduction of workplan commitments
- **Baseline:**
  - Dams inspected during SFY 2008
  - Oil & Gas inspections in SFY 2008
  - FFY 2008 Workplan
- **Action 4.4.1:** Evaluate the feasibility of developing a dam certification requirement for dam owners that will reduce the number of dam safety inspections that must be conducted by DOW staff..
- **Action 4.4.2:** Limit oil and gas inspections to complaint response by July 2008.
- **Action 4.4.3:** Revisit next year's work plan obligations with EPA and attempt to reduce level of obligation for activities that have limited value.
- **Action 4.4.4:** Work with PSC to improve boil water advisory notification process.

Objective 5.0 --- Institutionalize a culture of "Mission Focus" within the division.

□ **Tactic 5.1** Integrate the operational plan and the program, organizational and process-improvement priorities into division culture.

- **Measures:** Percentage of staff familiar with mission statement, vision, core values, and operational plan of the division.
- **Baseline:** October/November 2008 e-survey results
- **Action 5.1.1:** Develop a vision statement and core values for the division, and develop a symbol or logo and motto that reflect the division's mission, vision, and core values by Oct. 31, 2008.
- **Action 5.1.2:** Develop a program where mangers recognize employees for behaviors relating back to core values and roll it out for peer-to-peer recognition. This includes the development of a mechanism to promote personal leadership / ownership and responsibility ("I" statements) among each employee by March 31, 2009.
- **Action 5.1.3:** Develop a manager's toolbox that includes information regarding personnel management rules and tools, training tools for staff and managers, program management tools, including, organizational, process evaluation, and communication tools, and employee recognition and reward tools by June 30, 2009.
- **Action 5.1.4:** Schedule two division-wide meetings per year to roll out operational plan and revisit core values.
- **Action 5.1.5:** Incorporate operational plan elements and the elements of program, organizational and process-improvement priorities into individual work plans by Jan. 31, 2009.

Department for Environmental Protection
Division of Water

Referral Directory

Accounts Payable	Water	4806	Linda Duncan
Accounts Receivable	Water	4806	Linda Duncan
Adopt a Stream	Water	4939	Jo Ann Palmer
Advisories, Swimming & Fish Consumption	Water	4962	Allison Fleck
Aerator Systems	Water	4851	Larry Sowder
Algae Info	Water	4861	John Brumley
Ambient Monitoring Data	Water	4926	Rob Blair
Americans with Disabilities Officers (ADA)	Water	4979	Karen Edwards
Animal Feeding Operations (AFO's)	Water	4850	Jory Becker
	Water	4896	Ronnie Thompson
Animal Waste Facilities	Water	4896	Ronnie Thompson
Asbestos	Water	4988	Brian Chitti
Auto/Truck Facilities-Waste water permitting (KPDES)	Water	4954	Mahmoud Sartipi
Biomonitoring of Whole Effluents	Water	4881	Charles Clark
Biological Monitoring	Water	4861	John Brumley
Boil Water Advisories	Water	4955	Sally Barclay
Bottled Water-Plan Review	Water	4804	Solitha Dharman
Budget	Water	4809	Tim Miller
	Water	4810	Ron Price
Car Wash, wastewater permitting	Water	4954	Mahmoud Sartipi
Certification - Water Monitoring Well Drillers	Water	4940	Joe Moffitt
Certification - Wetlands	Water	4855	Alan Grant
Chemical Plants Permit KPDES	Water	4851	Larry Sowder
Coal Mining Facilities Permitting (KPDES)	Water	4899	Ross Bishop
Combined Sewer Overflows (CSO's)	Water	4852	Gary Levy
Commercial Discharge Permits (KPDES)	Water	4905	Barry Elmore
Complaints	Water	4955	Sally Barclay
Comprehensive Tech. Assist. Prog.	Water	4958	Julie Roney
Computer (hardware/software)……	Water	4597	Karen Jones
Consumer Confidence Reports	Water	4987	Natalie Bruner
Corps of Engineers	Water	4855	Alan Grant
Dams	Water	4992	Marilyn Thomas
Dams - Inspections	Water	4992	Marilyn Thomas
……	Water	4991	Scott Phelps
Data Entry	Water	4580	Linda Baker
Data Entry - Water Wells	Water	4931	Jo Blanset
Data Entry - Groundwater	Water	4931	Jo Blanset
Data Management, Departmental	Water	4597	Karen Jones
Office of Information Services (OIS)	EEC	5174	
Distilleries-waste water permitting (KPDES)	Water	4851	Larry Sowder
Discharge Monitoring Data (DMR)	Water	4915	Carolena Bentley
	Water	4923	Vickie Prather

	Water	4810	Ron Price
Water - Grants	Water	4810	Ron Price
Groundwater Contamination	Water	4932	David Jackson
Groundwater Database	Water	4931	Jo Blanset
Groundwater Educational Material	Water	4947	Pat Keefe
Groundwater Monitoring	Water	4932	David Jackson
	Water	4926	Rob Blair
Groundwater Protection Plans	Water	4947	Pat Keefe
Groundwater Regulations	Water	4932	David Jackson
Groundwater Remediation (wastewater permitting) (KPDES)	Water	4954	Mahmoud Sartipi
Groundwater Sensitivity Vulnerability	Water	4932	David Jackson
Groundwater Technical Support	Water	4932	David Jackson
Groundwater Water Withdrawal Permit	Water	4933	Chris Yeary
Hydrogeology	Water	4948	Phil O'Dell
Industrial Wastewater Permitting KPDES	Water	4925	Sara Beard
Inventory (State-owned Property	Water	4806	Linda Duncan
Inventory Data Sheet (Drinking Water)	Water	4981	Todd Ritter
Karst Investigations	Water	4948	Phil O'Dell
KPDES Program	Water	4850	Jory Becker
KPDES, groundwater, dye tracing	Water	4932	David Jackson
	Water	4926	Rob Blair
KPDES, permit appl. asst./status General Process Requirements.	Water	4923	Vickie Prather
Laboratory Certification Bacteriological	Water	4968	Patrick Garrity
Lagoons - construction (KPDES)	Water	4896	Ronnie Thompson
Lake Info - standards	Water	4856	Randy Payne
Landfills Wastewater Permitting (KPDES)	Water	4954	Mahmoud Sartipi
Laundries - Wastewater Permitting (KPDES)	Water	4954	Mahmoud Sartipi
Lead & Copper in water	Water	4981	Todd Ritter
Line Extension Bans (Drinking Water)	Water	4804	Solitha Dharman
(Waste Water	Water	4823	Harold Sparks
Loan Administration (Procurement)	Water	4990	Lola Lyle
Maps - making maps; GIS	Water	4928	Carey Johnson
Maps - floodplain	Water	4928	Carey Johnson
Maps - geological	Water	4932	David Jackson
Maps - topographical w/ RMI markings	Water	4949	Jim Seay
Maps - water wells	Water	4931	Jo Blanset
Medical Exams (employee)	Water	161	Ken Joyce
Memoranda of Agreement (MOA)	Water	4810	Ron Price
Monitoring Wells	Water	4940	Joe Moffitt
MORs (Monthly Operating Reports)	Water	4959	Frank Hall
Municipal Discharge Permits (KPDES)	Water	4905	Barry Elmore
Natural Flood Insurance Program	Water	4906	Chris Hart
	Water	4904	Russell Neal
Needs Survey	Water	4961	Shafiq Amawi
	Water	4839	Amanda Yeary
News Release, Press	Water	4962	Allison Fleck
No Discharge Certification or Operation Permits (KPDES)	Water	4851	Larry Sowder
Non-Coal Mining (KPDES)	Water	4851	Larry Sowder
Non-Point Source (NPS) Information	Water	4909	Jim Roe
	Water	4907	Margi Jones

Oil & Gas (Activities & Registration)	Water	4894	Dan Juett
	Water	4901	Diana Davidson
Ollie Otter	Water	4939	Jo Ann Palmer
On-site Wastewater	Water	4842	Julie Smoak
Open Records Request	Water	4571	Morgan Elliston
Outstanding State Resource Waters	Water	4861	John Brumley
	Water	4856	Randall Payne
Payroll Checks, Distribution	Water	4973	Becky Correll
PCBs (polychlorinated biphenyls)	Water	4859	Eric Eisiminger
Permit Compliance System	Water	4923	Vickie Prather
Permits			
Dams	Water	4991	Scott Phelps
	Water	4992	Marilyn Thomas
Permits & Plans Review-Distribution	Water	4804	Solitha Dharman
Floodplains - fill, bridges, shear relocations	Water	4879	Jim Oerther
KPDES	Water	4905	Barry Elmore
Water	Water	4804	Solitha Dharman
Water Withdrawal	Water	4944	Rita Hockensmith
Personnel	Water	4973	Becky Correll
Pipelines & Paper Mills	Water	4851	Larry Sowder
	Water	4896	Ronnie Thompson
Plan Review-Fed. Assist. Request (Drinking Water)	Water	4804	Solitha Dharman
Plan Reviews (Also See PERMITS)			
Drinking Water-Distribution	Water	4804	Solitha Dharman
Drinking Water-Treatment	Water	4804	Solitha Dharman
Wastewater Treatment Plants	Water	4924	Greg Goode
Planning, Watershed	Water	4908	John Webb
	Water	4927	Paulette Akers
Pond Construction	Water	4896	Ronnie Thompson
Power Plant Permit (KPDES)	Water	4851	Larry Sowder
Press Releases	Water	4962	Allison Fleck
Pretreatment Programs (KPDES)	Water	4880	Jennifer Spradlin
PRIDE	Water	4961	Shafiq Amawi
Printout Request for PCS	Water	4923	Vickie Prather
Program Planning	Water	4810	Ron Price
Public Education Program	Water	4962	Allison Fleck
Public Hearings	Water	4918	Ann Workman
Public Information Coordinator	Water	4962	Allison Fleck
Public Notification (Drinking Water)	Water	4987	Natalie Bruner
Public Notice-KPDES	Water	4918	Ann Workman
Purchasing	Water	4811	Linda Mitchell
	Water	4806	Linda Duncan
Rainfall Intensity Values	Water	4991	Scott Phelps
	Water	4992	Marilyn Thomas
Receipts	Water	4806	Linda Duncan
Reference Reach Program	Water	4861	John Brumley
Refunds, Agency	Water	4806	Linda Duncan
Regionalization (Wastewater)	Water	4961	Shafiq Amawi
Regulation Development	Water	4808	Abigail Powell
Regulation Promulgation Status	Water	4808	Abigail Powell
Regulations, proposed			
(requests for copies	Water	4808	Abigail Powell
Regulations & Statutes	Water	4810	Ron Price
Review 201	Water	4912	Jill Bertelson
Safe Drinking Water Act	Water	4808	Abigail Powell
Safety Coordinator	Water	4979	Karen Edwards

Sanitary Sewage Discharge Permits	Water	4905	Barry Elmore
Sanitary Sewer Overflows	Water	4852	Gary Levy
Sewage Treatment Plants (Municipal)	Water	4805	Anshu Singh
Sewer Line Extension & Private Sewage Plants	Water	4823	Harold Sparks
Sewer Overflows (CSOs)	Water	4852	Gary Levy
Sewer Sanctions	Water	4822	Hamid Beykezdeh
Soil Erosion	Water	4909	Jim Roe
	Water	4996	Brooke Shireman
Source Water Protection	Water	4934	Bill Caldwell
State Revolving Fund-Drinking Water	Water	4990	Lola Lyle
State Revolving Fund - Wastewater	Water	4990	Lola Lyle
Stone Quarry	Water	4851	Larry Sowder
Storet			
Fecal Coliform	Water	4981	Todd Ritter
Stormwater - discharge (KPDES) MS4	Water	4891	Abigail Rains
Stormwater-discharge (KPDES) Construction	Water	4849	Alan Ingram
Stormwater - enforcement	Enforcement	4888	Kate Carigan
Straight Pipes	Water	4842	Julie Smoak
	Enforcement	4888	Kate Carigan
Surface Water Quality	Water	4861	John Brumley
		4856	Randall Payne
Surface Water Withdrawal	Water	4934	Bill Caldwell
Surplus Property	Water	4811	Linda Mitchell
SWAPP	Water	4934	Bill Caldwell
Tap on Bans - Wastewater	Water	4852	Gary Levy
Tap on Bans – Drinking Water	Water		vacant
Technical Groundwater Issues	Water	4932	David Jackson
Total Maximum Daily Load (TMDL's)	Water	4876	Ann Fredenburg
Toxicity Reduction Evaluations	Water	4881	Charles Clark
Toxicity Testing	Water	4881	Charles Clark
	Water	4945	Susan Cohn
Training Coordinator	Water	4979	Karen Edwards
Underground Injection Control (UIC) Programs	Water	4932	David Jackson
Wage Rates (SRF)	Water	4990	Lola Lyle
Wastewater Discharge			
Toxics Wasteloads & Modeling	Water	4914	Courtney Seitz
Wastewater Permitting			
Drinking Water Plants (KPDES)	Water	4896	Ronnie Thompson
Water Complaints	Water	4955	Sally Barclay
Water, Director	Water	4972	Sandra Gruzesky
Assistant Director	Water	4012	Peter Goodmann
Administrative Support	Water	4973	Becky Correll
Compliance and Technical Assistance Branch, Mgr.	Water	4957	Tom Gabbard
Administrative Support	Water	4966	Melissa Baughn
Resource Planning &Program Support Branch, Mgr.	Water	4810	Ron Price
Administrative Support	Water	4811	Linda Mitchell
Surface Water Permits Br., Mgr.	Water	4850	Jory Becker
Administrative Support	Water	4847	Mary Ann Craig
Water Infrastructure Branch, Mgr.	Water	4961	Shafiq Amawi
Administrative Support	Water	4970	Krystal Harrod
Water Quality Branch, Mgr.	Water	4927	(Acting)Paulette Akers
Administrative Support	Water	4857	Kathy Clarkson
Watershed Management Branch, Mgr.	Water	4927	Paulette Akers
Administrative Support	Water	4930	Victoria Cross
Water Availability	Water	4934	Bill Caldwell
Water Conservation	Water	4958	Julie Roney

Water Line Extensions (Drinking Water)			
Drinking Water-Distribution	Water	4804	Solitha Dharman
Drinking Water-Treatment	Water	4823	Harold Sparks
Water Pollution Control	Water	4962	Allison Fleck
Water Quality Certification- Permit	Water	4855	Alan Grant
Administrative Support	Water	4857	Kathy Clarkson
Water Quality Monitoring, streams	Water	4861	John Brumley
Water Quality Monitoring, lakes	Water	4861	John Brumley
Water Quality Report to Congress (305b report)	Water	4856	Randy Payne
Water Quality Standards	Water	4012	Peter Goodmann
Water Quality Standards Request	Water	4012	Peter Goodmann
Water Patrol, locks and Dams		564-3074	
Water Supply Planning	Water	4934	Bill Caldwell
Water Supply Protection	Water	4934	Bill Caldwell
Water/Wastewater Opr. Certification	DCA	652	Julia Kays
Water Watch	Water	4939	Jo Ann Palmer
Water Well Drilling & Enforcement	Water	4940	Joe Moffit
	Water	4938	Sam Collins
Water Well Records	Water	4931	Jo Blanset
Water Withdrawal Database	Water	4944	Rita Hockensmith
Water Withdrawal Permitting	Water	4934	Bill Caldwell
	Water	4944	Rita Hockensmith
Watersheds	Water	4927	Paulette Akers
Kentucky River Basin		(859) 257-1299	Melissa McAlister
Licking River Basin	Water	(606) 783-8655	Lajuanda Haight-Maybriar
Salt River Basin		4908	John Webb
Cumberland River Basin	Water	(606) 878-0157	Rob Miller
Upper Cumberland River Basin	Water	(606) 878-0157	Rob Miller
Four Rivers Basin	Water	(606) 878-0157	Rob Miller
Tennessee River Basin	Water	(606) 878-0157	Rob Miller
Mississippi River Basin	Water	(606) 878-0157	Rob Miller
Lower Cumberland River Basin	Water	(606) 878-0157	Rob Miller
Green River Basin	Water	(270) 746-7475	Dale Reynolds
Tradewater River Basin	Water	(270) 746-7475	Dale Reynolds
Ohio River Basin	Water	4908	John Webb
Big Sandy River Basin	Water	4908	John Webb
Little Sandy River Basin	Water	4908	John Webb
Tygarts River Basin	Water	4908	John Webb
Watershed Planning	Water	4908	John Webb
	Water	4927	Paulette Akers
Webpage Development-Drinking Water	Water	4962	Allison Fleck
Well Tags & Forms	Water	4940	Joe Moffitt
	Water	4931	Jo Blanset
Wellhead Protection	Water	4933	Chris Yeary
Wells	Water	4940	Joe Moffitt
	Water	4938	Sam Collins
Wetlands Construction Permits	Water	4855	Alan Grant
Wetlands/401,404 - Enforcement	Enforcement	290	Jeff Cummins
Wild Rivers	Water	4861	John Brumley
Wild Rivers/KRS Chpt 146 – Enforcement	Enforcement	290	Jeff Cummins
Zebra Mussels	Water	4870	Sue Bruenderman
Water Conservation	Water	4958	Julie Roney
Water Line Extensions (Drinking Water)			
Drinking Water-Distribution	Water	4804	Solitha Dharman
Drinking Water-Treatment	Water	4823	Harold Sparks
Water Pollution Control	Water	4962	Allison Fleck

Water Quality Certification- Permit	Water	4855	Alan Grant
Administrative Support	Water	4857	Kathy Clarkson
Water Quality Monitoring, streams	Water	4869	John Brumley
Water Quality Monitoring, lakes	Water	4869	John Brumley
Water Quality Report to Congress (305b report)	Water	4856	Randy Payne
Water Quality Standards	Water	4012	Peter Goodmann
Water Quality Standards Request	Water	4012	Peter Goodmann
Water Patrol, locks and Dams		564-3074	
Water Supply Planning	Water	4934	Bill Caldwell
Water Supply Protection	Water	4934	Bill Caldwell
Water/Wastewater Opr. Certification	DCA	652	Julia Kays
Water Watch	Water	4939	Jo Ann Palmer
Water Well Drilling & Enforcement	Water	4940	Joe Moffit
	Water	4938	Sam Collins
Water Well Records	Water	4931	Jo Blanset
Water Withdrawal Database	Water	4944	Rita Hockensmith
Water Withdrawal Permitting	Water	4934	Bill Caldwell
	Water	4944	Rita Hockensmith
Watersheds	Water	4927	Paulette Akers
Kentucky River Basin		(859) 257-1299	Melissa McAlister
Licking River Basin	Water..	(606) 783-8655..	Lajuanda Haight-Maybriar
Salt River Basin		4908	John Webb
Cumberland River Basin	Water	(606) 878-0157	Rob Miller
Upper Cumberland River Basin	Water	(606) 878-0157	Rob Miller
Four Rivers Basin	Water	(606) 878-0157	Rob Miller
Tennessee River Basin	Water	(606) 878-0157	Rob Miller
Mississippi River Basin	Water	(606) 878-0157	Rob Miller
Lower Cumberland River Basin	Water	(606) 878-0157	Rob Miller
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Tradewater River Basin	Water	(270) 746-7475	Dale Reynolds
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Big Sandy River Basin	Water	4908	John Webb
Little Sandy River Basin	Water	4908	John Webb
Tygarts River Basin	Water	4908	John Webb
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Wild Rivers	Water	4869	John Brumley
Wild Rivers/KRS Chpt 146 – Enforcement	Enforcement	290	Jeff Cummins
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